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AUTHOR Pribyl, Paul F.
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ABSTRACT

Lesson plans are provided for the Fire Officer I course. Material for each lesson is presented in this format: course title, lesson title, equipment required, training aids needed, and a content outline which details teaching points and related instructor references. These references, or suggested readings, are listed at the conclusion of each lesson plan. Topics covered in the 12 lessons are introduction and fire department officership and organization; supervisory and administrative responsibilities of fire officers and desirable qualifications for officership; non-fire fighting activities of the company fighter, the chief officer, and the fire chief (leadership, professional knowledge, and authority); non-fire fighting functions of the fire chief (administrating, communicating, decision making, planning, and delegating authority); fire fighting activities of the fire officer; fire fighting functions of the chief officer; pre-fire planning; fire protection facilities; fire fighting procedures; and fire inspection procedures. (Lesson plans 10-12 comprise approximately one-half of this document.) (YLB)

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WISCONSIN BOARD OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION
4802 Sheboygan Avenue - 7th Floor P.O. Box 7874
Madison, Wisconsin 53707

Robert P. Sorensen, Ph.D. State Director

FIRE OFFICER I

LESSON PLANS

Prepared
by

Paul F. Pribyl, Consultant
Fire Education and Training

BUREAU OF PROGRAM DEVELOPMENT AND OPERATIONS

George R. Kinsler
Bureau Director

Arnold H. Potthast
Chief Supervisor
Vocational Education

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WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-1-A
TIME

COURSE: FIRE OFFICER

LESSON: INTRODUCTION

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

INTRODUCTION

"Fire Fighting" is the action taken to cope with the unintentional or undesired burning of combustible materials.

"Firefighter" is the term used to designate the individual trained to control and extinguish such incidents under the leadership of his fire officers.

"Fire Officers" are the members of the fire service with supervisory responsibilities who, regardless of rank, provide the leadership in their departments.

The fire department protects life and property against loss from fire and other manmade or natural disasters.

Whenever life or property is threatened by fire or disaster, an emergency exists. The firefighting personnel responding to an alarm must take immediate action upon arrival, remembering it is not an emergency for them, but rather a duty they normally perform.

The functions of a fire department make it different from most other organizations and require specially trained fire officers to provide leadership. To be effective these officers must have performed all the tasks required of a firefighter so that they can appreciate and understand the work others are required to perform.

Industry, business and the military services have found that some form of a "chain of command" must be established for efficient operations. Plans, policies and directions are sent from the manager or commanding officer, thru their subordinate officers, to all personnel to insure effective performance of their work assignments.

INSTRUCTORS NOTES	TEACHING POINTS
	Leaders of fire departments can effectively utilize the established principles of industrial personnel organization in the training of their fire officers as leaders. The key to successful fire protection is the leadership provided. The best of equipment is of little value if it is not properly utilized; and manpower is wasted if it is not competently directed.

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-1-B
TIME

COURSE: FIRE OFFICER

LESSON: FIRE DEPARTMENT OFFICERSHIP

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS
	I. Fire Department Officership Levels of Fire Officers: Company Officer - commands fire company or on duty platoon. Chief Officer - usually commands and directs a number of companies within a district or battalion. Also chiefs of a bureau. Fire Chief - administrative head of fire department. 1. The Fire Officer As A Representative While the levels of responsibility for chief officers and company officers are different, as fire officers they: a. Represent the men under their command to their chief officer. (1) to insure the wants and needs of their men are made known. (2) to insure that they and their men have a complete understanding of duties, orders and operations. b. Represent the fire department and solve fire protection problems with authority. c. As officials, represent the Town, Village or City government. The fire officer should represent his department and local government with all the pride and dignity that is characteristic of the responsible position he holds.

INSTRUCTORS NOTES	TEACHING POINTS

2. Ability Under Leadership

In industry employees work on a planned schedule, under favorable conditions, which permits the maximum utilization of equipment, material and manpower. When each employee gains skill in an operation, his ability, under supervision, is combined with the skills of other employees to produce the finished product.

The situation in the fire service is quite different, firefighting activities cannot be scheduled and working conditions during emergencies are not always favorable. Fire service personnel must be trained in many skills and under leadership, work efficiently with others to provide good fire protection for their community. To accomplish this a three phase program, Preparation - Anticipation - Action, may be used.

A. Preparation
   (1) Induction training for new personnel - explanation of policy - details of job performance.
   (2) Job Performance Training - to insure continued competence in job.
   (3) Versatility training - developing a wider range of skills and abilities.
   (4) Supervisory training - administrative duties, human relations, leadership, regulations, technological developments and safety training.

B. Anticipation
   (1) Pre-planning
      a. Known facts - construction, occupancy and use, access, water supply, apparatus, manpower, etc.
      b. Variables - time of day, weather condition, wind, direction, velocity, etc.

C. Action
   (1) Deployment of forces
   (2) Sequence of operations
   (3) Coordination and supervision
   (4) Communications

INSTRUCTORS NOTES	TEACHING POINTS

3. Coordination of Effort

To effectively operate at a fire or other emergency the actions of all personnel must be coordinated.

The plans for carrying out coordinated fire fighting operations should include:

a. proper utilization of all units available in a community for response to first or greater alarms.
b. establishment of a command post where the chief in command will be able to:

   (1) supervise the operation
   (2) be reached by subordinates with reports
   (3) have adequate means of communications, chiefs' aides, radio, etc.

c. assignment of units to work under a specific chief officer.
d. for transmission of orders to firefighters by their unit officers.
e. provisions for directing responding greater alarm or mutual aid companies to their area of operations.
f. mutual aid and command procedures that will permit chief officers to effectively direct all companies coming to their assistance. When responding to another community, assist them in directing operations at their assigned position.

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-1-C
TIME

COURSE: FIRE OFFICER

LESSON: ORGANIZATION AND THE FIRE OFFICER

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

II. Organization and The Fire Officer

To organize is to arrange independent parts into a functional unit. In the Fire Service, organization is the executive structure of personnel arranged around fire apparatus and fire fighting equipment. A good organizational structure does not take the place of leadership; it merely provides a means to exercise effective control.

1. Principles of Organization

Organizations are made up of persons, not things, and no realistic approach to organizational problems can afford to ignore this fact.

Some of the principles of organization are:

a. The work should be apportioned among the various individuals and units according to some logical plan.
b. The more complex the organization and the more highly specialized the division of work, the greater the need for coordination at the top.
c. Lines of authority and responsibility should be made as definite and direct as possible.
d. Authority should be commensurate with responsibility.
e. There should be "unity of command" throughout.
f. There is a limit to the number of subordinates who can be effectively supervised by any one officer.

INSTRUCTORS NOTES	TEACHING POINTS
	2. The Fire Service: A Function of Municipal Government Municipal governments are formed when several departments are coordinated into an organization of municipal affairs, examples of departments in municipal government are Fire, Police, Public Works, Health and Water. Each department has a definite function and all are responsible to the administrative officials of the municipality. Municipal administration conform to several forms of government. The form that is adopted determines how the fire department and other service departments function and it also provides the connecting link between the fire department and the administration. Some of the common forms of government are: A. Managerial B. Mayor and Council C. Commission D. Town or Village Board The fire department is one of several public service departments in municipal government, and its function is referred to as "The Fire Service". A fire chief is generally the administrative head of the fire department and his assigned duties are defined either in a city charter or a city ordinance. 3. Line of Responsibility Fire officers' duties and responsibilities are divided into two operational divisions. While the fire chief is the head of the department he may have to delegate certain phases of his authority to the deputy or assistant chiefs to insure continuity of operations particularly if he is absent from the city. In large departments, both paid and volunteer, the area protected may be divided into battalions or districts. These chiefs then are delegated authority by the chief of the department to act in their respective districts or battalions. When a company officer is the first to arrive at a fire he assumes the authority and responsibility of the fire chief until a senior officer arrives.

INSTRUCTORS NOTES	TEACHING POINTS

It is essential that all fire officers be familiar with their communities pre-fire plan of attack, be able to implement it and to adapt the plan to the situation.

The line of responsibility requires officers to perform two types of leadership functions if the department is to be operated efficiently and effectively. These two types of leadership are often referred to as "Line Officers" and "Staff Officers".

4. The Line Officer

A line officer normally directs the fire fighting and non-fire fighting functions of a fire unit or units. This of course does not mean that the line officer cannot have responsibilities other than those referred to. In the average size department because of personnel limitations, he may be required to perform staff functions in addition to his line duties. If this were the case this officer would be designated both a line and staff officer.

The following is an example of line officer organization in the fire department.

a. Fire Chief
b. Deputy Chief
c. Assistant Chief(s)
d. District or Battalion Chief(s)
e. Captains
f. Lieutenants

5. The Staff Officer

As the title implies it is reasonable to assume that the staff officer performs administrative duties rather than fire fighting assignments.

Generally the staff officers will head bureaus or service divisions such as:

a. Bureau of Fire Prevention & Investigation
b. Training Division
c. Fire Alarm and Communications Division
d. Bureau of Repair and Maintenance
e. Bureau of Personnel

INSTRUCTORS NOTES | TEACHING POINTS

The work loads of the various bureaus or divisions will indicate whether it is essential to assign a full-time staff officer or if a line officer can be given staff officer responsibilities in a particular area. As a result you may find line officers assigned to some staff officer functions but regular staff officers seldom have other duties. Staff officers also serve as advisors to the fire chief.

6. Cooperation of Officers

Cooperate means to act or work jointly with others to regulate and combine efforts to effectively accomplish an assignment. During an emergency the efforts of several fire officers may work in direct opposition to one another if their objectives are not coordinated. If they are to successfully complete their assignment they must coordinate their efforts by working jointly with others.

One of the most effective ways of developing cooperation and efficient operations is to implement a thorough program of pre-fire planning. By devising a course for fire fighting units to follow when fire occurs there is less chance for error or misunderstanding of the operations at the emergency.

7. Military Aspects of Fire Department Officership

The fire department is often referred to as a "quasi" military organization. This does not mean that the department should follow military forms and organizational breakdown but a comparison of the "chain of command" will show the similarity between them.

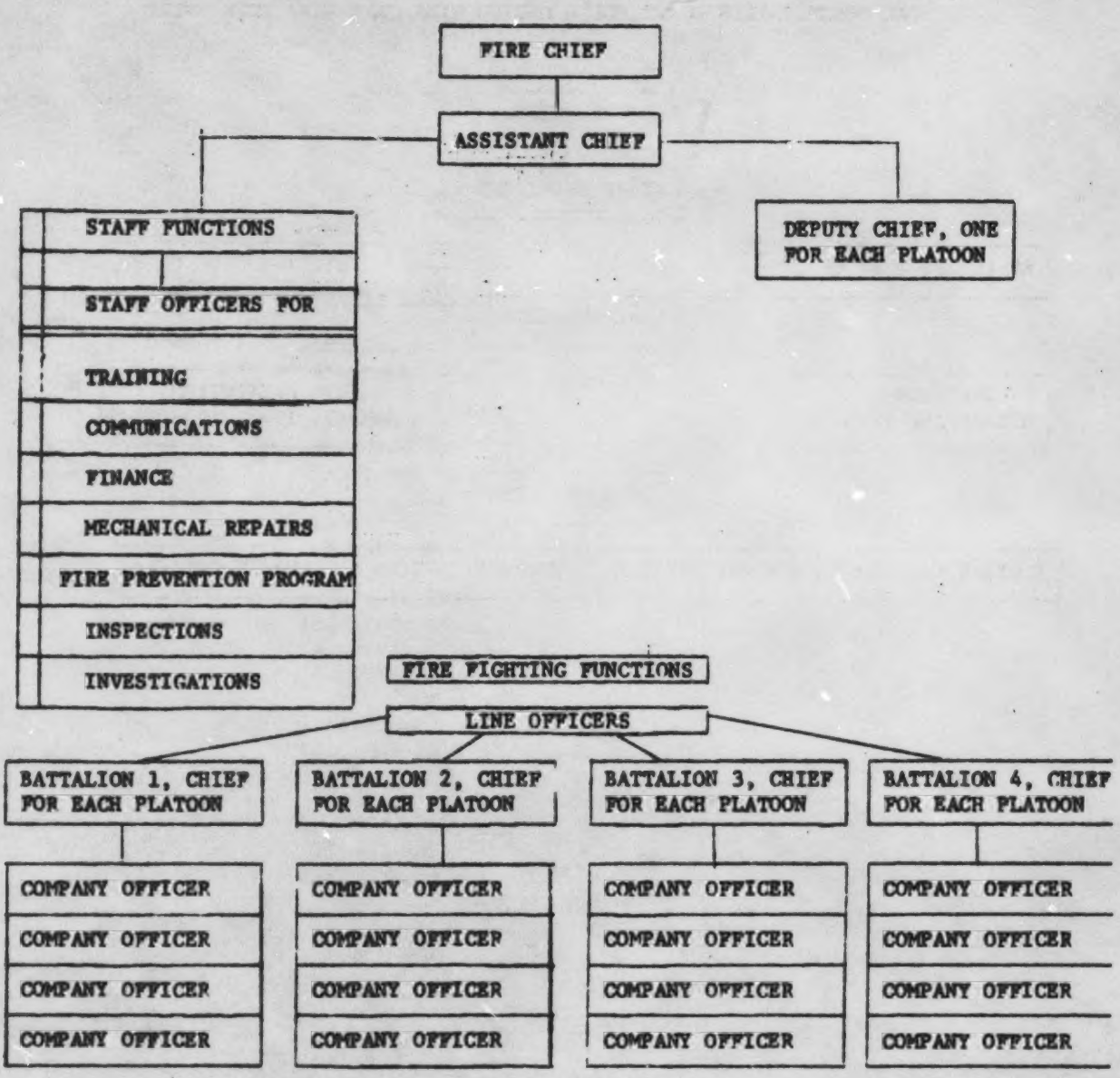
The pre-fire planning of the department can be compared to the pre-battle planning and training of the military. Even the terms used to designate them are similar; battle tactics and fire fighting tactics.

The fire officer should utilize the time before and between emergencies to develop pre-fire plans as the difference between his success and failure during fire fighting operations may depend on his ability to observe conditions, apply pre-fire plans and decide what further action should be taken.

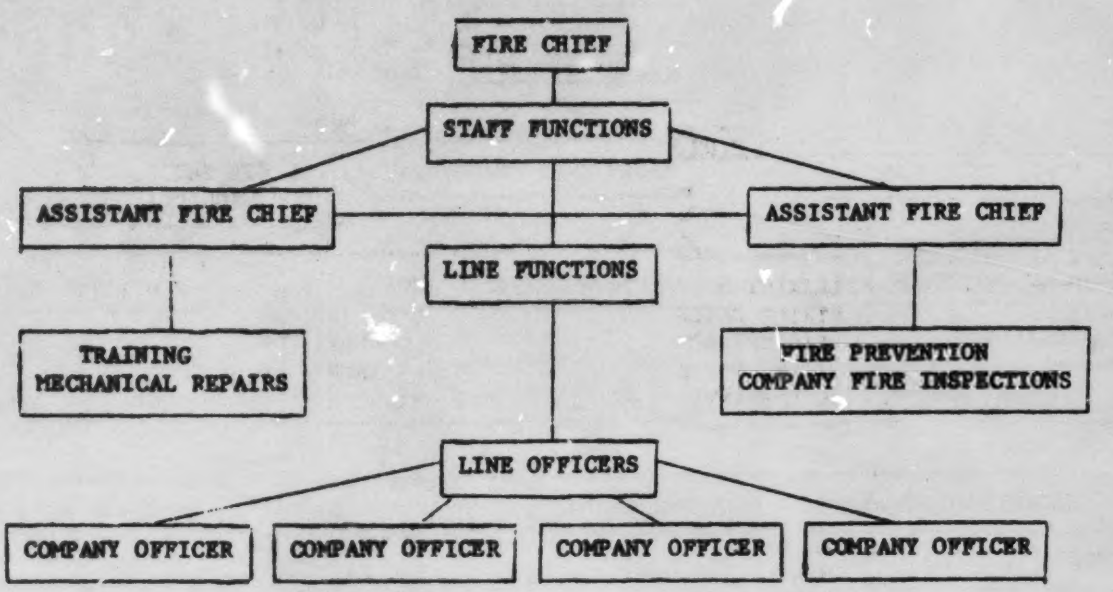
INSTRUCTORS NOTES	TEACHING POINTS
	8. Examples of Organizational Plans The type of fire department organization depends on the size of the city, the form of local government, and the scope of activities to be administered. Good organizations are not confined to any particular form of local government, for in any city where the fundamental principles of organization are followed rather than consideration of political expediency, a good organizational plan is inevitable. When the organizational plan if formulated the administrative responsibilities should be delegated to the staff officers and the fire fighting duties to the line officers. Staff officers generally work an eight hour tour of duty during the daylight hours while the fire fighting force must perform their duties over a twenty-four hour period. The platoon system is used to divide the hours among the fire fighting crews. The firefighters work shifts according to the particular plan adopted by the department. Some organization plans are provided on the following pages for informational and discussion purposes.

COURSE: FIRE OFFICER

A TYPICAL ORGANIZATION CHART FOR A LARGE PAID FIRE DEPARTMENT

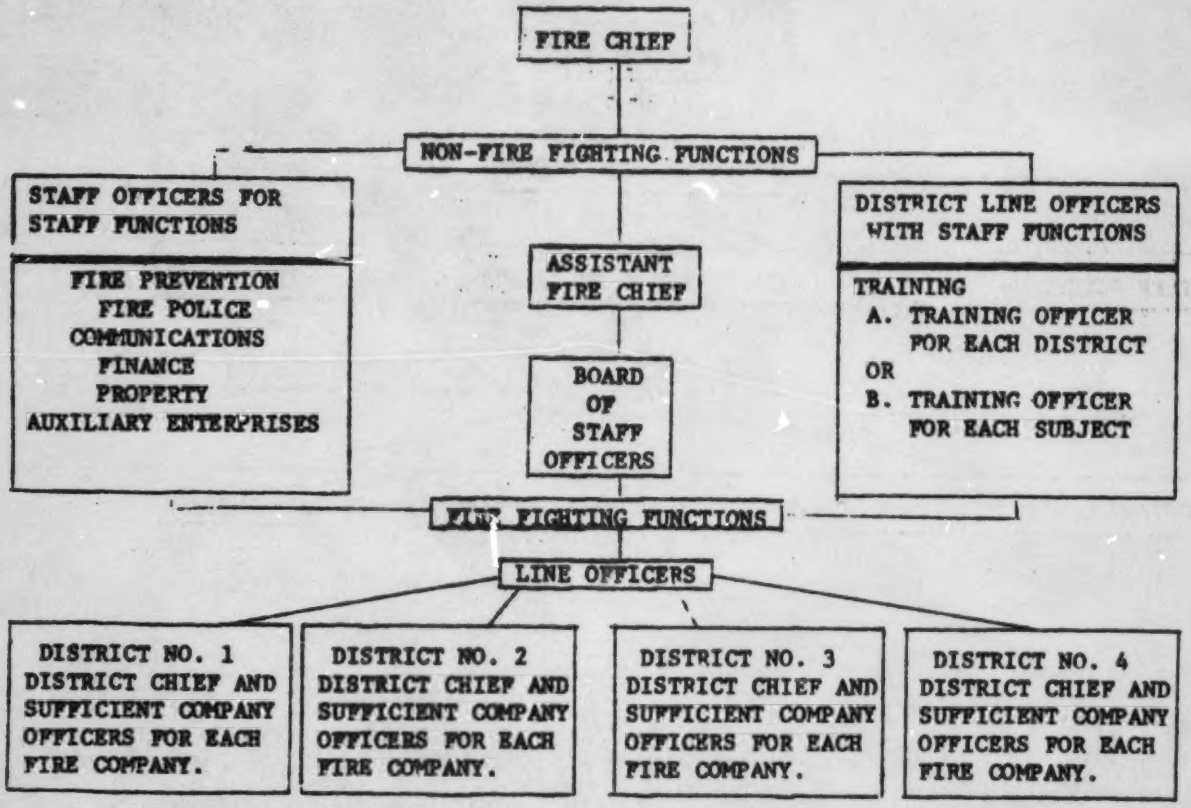


A TYPICAL ORGANIZATION CHART FOR A MEDIUM SIZE PAID FIRE DEPARTMENT



COURSE: FIRE OFFICER

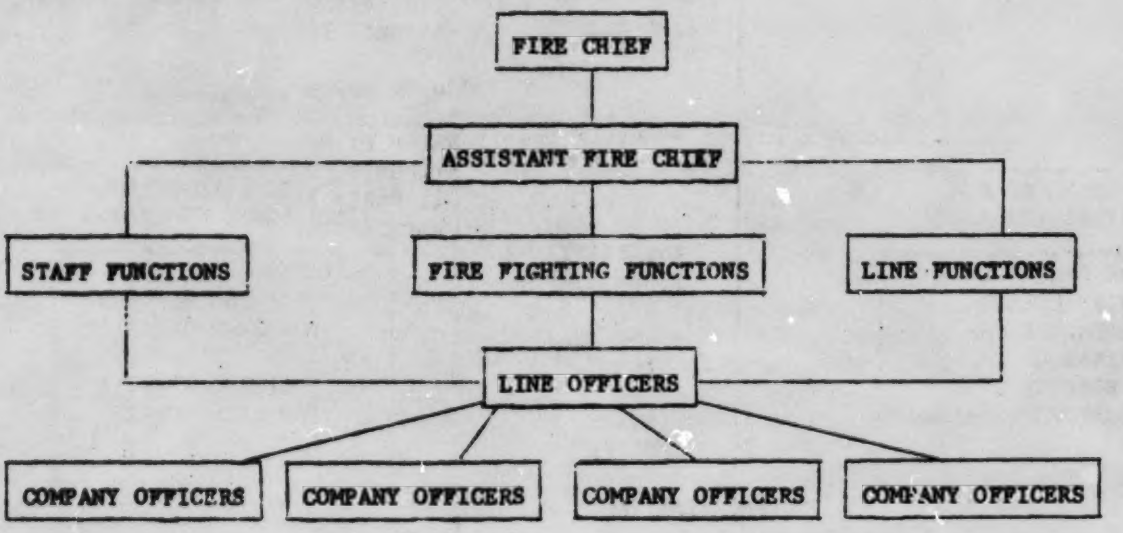
A TYPICAL ORGANIZATION CHART FOR A LARGE VOLUNTEER FIRE DEPARTMENT


FIRE CHIEF
NON-FIRE FIGHTING FUNCTIONS
STAFF OFFICERS FOR STAFF FUNCTIONS
FIRE PREVENTION
FIRE POLICE
COMMUNICATIONS
FINANCE
PROPERTY
AUXILIARY ENTERPRISES
ASSISTANT FIRE CHIEF
BOARD OF STAFF OFFICERS
DISTRICT LINE OFFICERS WITH STAFF FUNCTIONS
TRAINING
A. TRAINING OFFICER FOR EACH DISTRICT
OR
B. TRAINING OFFICER FOR EACH SUBJECT
FIRE FIGHTING FUNCTIONS
LINE OFFICERS
DISTRICT NO. 1 DISTRICT CHIEF AND SUFFICIENT COMPANY OFFICERS FOR EACH FIRE COMPANY.
DISTRICT NO. 2 DISTRICT CHIEF AND SUFFICIENT COMPANY OFFICERS FOR EACH FIRE COMPANY.
DISTRICT NO. 3 DISTRICT CHIEF AND SUFFICIENT COMPANY OFFICERS FOR EACH FIRE COMPANY.
DISTRICT NO. 4 DISTRICT CHIEF AND SUFFICIENT COMPANY OFFICERS FOR EACH FIRE COMPANY.

THIS ORGANIZATION EXAMPLE MAY, TO SOME DEGREE, BE ADAPTED TO A LARGER CITY WITH AN ALL VOLUNTEER DEPARTMENT. ITS SIMILARITY TO A LARGE PAID DEPARTMENT IS OBVIOUS. THE NUMBER OF FIRE STATIONS, FIRE COMPANIES, AND DISTRICTS WILL REGULATE THE NUMBER OF VOLUNTEER FIREFIGHTERS AND THE NUMBER OF FIREFIGHTERS WILL REGULATE THE TRAINING REQUIREMENTS.

COURSE: FIRE OFFICER

A TYPICAL ORGANIZATION CHART FOR A SMALL PAID OR VOLUNTEER FIRE DEPARTMENT



INSTRUCTORS NOTES	TEACHING POINTS

References - Suggested reading for Lesson FO-1

The Fire Department Officer - 2nd Edition - IFSTA

Published by - The Department of Fire Protection
Oklahoma State University
Stillwater, Oklahoma

Municipal Fire Administration - 1967 - ICMA

Published by - The International City Managers' Assn.
1313 East 60th Street
Chicago, Illinois 60637

Fire Officers Guide to Leadership - 1963

Published by - Water B. Patterson, A.B., M.A.
Arthur R. Pell, A.D., M.A.
111 Dietz Street
Hempstead, N.Y. 11550

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-2-A

COURSE: FIRE OFFICER

LESSON: THE FIRE OFFICER AS A SUPERVISOR

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

1. Supervisory Responsibilities

The fire officer has a basic responsibility to five groups in performing his duties.

a. The Firefighters - these men have a right to expect fair treatment, good working conditions and that their efforts make a meaningful contribution to the overall operations of the department.

b. The Public - the fire officer, regardless of rank, has a responsibility to the public. They are, in a sense, investors in the fire service who expect a fair return on their tax dollar shown by the effectiveness and efficiency of their fire department.

c. The Elected Officials - the Mayors, City Manager, Village Presidents and Town Chairmen, along with their Councils and Boards have a right to expect a sense of duty, interest in technical improvement and loyalty from the fire officer.

d. Other Municipal Departments - the fire officer has a responsibility to cooperate with other municipal departments and when they are assisting in fire protection activities, coordinating their efforts.

e. Local Governments - Laws and Ordinances are provided to make effective fire protection possible. It is the responsibility of the fire officer, not only to uphold and enforce these Laws and Ordinances, but to make recommendations for changes or additions, so that they are relative to the fire protection needs of the community.

INSTRUCTORS NOTES	TEACHING POINTS

The fire officer should realize that in the proper performance of his duties that he is providing three kinds of service.

a. Managerial
b. Instructional
c. Coordination

Some fire officers, particularly those in the rank of Lieutenant and Captain, may not consider themselves as part of management. This is not true. All fire officers efficiently performing their duties will, at some time, perform all of the following tasks which are managerial services.

(1) Keeping abreast with work methods, new equipment, procedures and processes.

(2) Keeping up-to-date on administrative problems, aims and policies.

(3) Seek information that pertains to his responsibility.

(4) Plans his part of administrative responsibilities efficiently and effectively.

(5) Assists in the development of pre-fire planning.

The provision of instructional services includes:

(1) Gives firefighters instructions as necessary for work to proceed as planned.

(2) Trains firefighters how and why to develop into an efficient working group.

(3) Explains the importance and purpose of fire fighting to each firefighter.

(4) Provides for the development and growth of skills in fire fighting.

(5) Instructs firefighters in the plans, policies, and aims of the organization.

Coordinal service is the third provided by fire officers, but it is equally as important as the managerial and instructional services to the operations of the department.

INSTRUCTORS NOTES	TEACHING POINTS

(1) Promotes and secure the cooperation of firefighters.

(2) Gives credit for personal and group improvement.

(3) Provides orientation and break-in procedure for each new firefighter.

(4) Makes necessary adjustment to insure an even running organization.

(5) See that work is done according to plan.

The fire officer has the responsibility of leading and supervising his subordinates, NOT performing their duties. To illustrate this fact a comparison has been made between the activities of a firefighter and fire officer.

Gets work done by doing	Gets work done thru
Kinds of tools used:	personnel
Hose-nozzles-ladders	Kind of tools used:
apparatus, equipment, etc.	personnel
Skills required:	Skills required:
Use of tools	Planning
Manual skills	Instructing
Work as a team	Coordinating
Knowledge required:	Knowledge required:
Fire fighting practices	Fire fighting practices
Fire prevention	Instructor training
Departmental plans	Fire hazards & causes
	Pre-fire planning
	Fire prevention
	Fire fighting procedures
	Fire department management

The competent fire officer must realize that all his fellow employees have certain definable needs which determine their behavior in dealing with personal problems and those pertaining to thier fire department assignments and duties.

Most firefighters want to provide better service to their community. They want to be helpful and maintain good working relations with other personnel. They need to be treated in an impartial manner and receive recognition of their abilities in their department.

INSTRUCTORS NOTES	TEACHING POINTS

These several needs and wants, can be illustrated in six basic psychological concepts which the good fire officer should recognize and make every reasonable effort to satisfy.

a. Recognition as an Individual

Each person is different from another. Each firefighter likes to feel that others recognize him for his own qualities, for himself. While realizing there can't be a separate set of rules for each man, the fire officer should take the individuality of each subordinate into consideration whenever possible.

To fully utilize the potential of each firefighter, the officer should remember he is a person not a statistic or badge number and show a sincere interest in -

his family, its problems
his schooling and ambitions
his hobbies
his extra-curricular activities
his welfare in general

Psychologists have found that only about 5% of employees want additional responsibilities. A firefighter who desires to improve himself can be valuable to the fire service and the department. The effective fire officer will recognize this type of man and encourage him in the attainment of his goals.

Lack of recognition, as an individual, may result in a previously good firefighter over-asserting himself to gain the desired recognition. This over-assertion could cause problems for the officer, as the firefighter may resort to undesirable behavior patterns by:

- breaking regulations
- insubordination
- constantly filing grievances

b. Pride in work

Pride is one of the greatest influences over the acts and conduct of man. The individual should have pride in himself, his work and progress.

INSTRUCTORS NOTES	TEACHING POINTS

When the fire officer gives his subordinates a feeling of pride in the job whether they are maintaining quarters or equipment, making inspections or fighting a fire, both effort and quality will improve. They will also take pride in their department.

Some of the ways a fire officer can instill pride are -

- being proud of HIS job in the fire service
- impressing his men with the importance of their company, battalion and department
- showing the men how important each part of the job is - how it is an essential part of the whole operation.
- always making the men aware of the worthwhileness and importance of their job.

c. Sense of belonging

Most men are happier when they belong to a group they feel that they are part of. They are more efficient and cooperative and when the man identifies himself with the entire group, the group gains, and the man will work harder. An excellent example of group pride is the Marine Corps' "espirit d'corps".

While a fire officer cannot be expected to change a man's personal lifetime habits, he must attempt to motivate him so that he will become an effective member of the group.

Do you as a fire officer recognize any or all of the men in the following group -

- the good man who is disliked by the others and never gets their help on any job
- the good man who never helps others
- the man who never volunteers or asks for instruction when things go wrong, who sits back when he finishes a job
- the man who does exactly what he is told and nothing more

INSTRUCTORS NOTES	TEACHING POINTS
	- the man who passes the buck - the chisler who is always cutting corners, taking advantage of any leeway that is allowed - the man who ignores petty details, is poor on maintenance, careless about his equipment, lets others clean up after him, does not bother to keep his tools in order - the man who quarrels with others about trifles, gets irritated and abusive - the man who is so busy "polishing apples" or playing "politics" that he does not have time for work - the man who is beset by one-day illnesses that usually strike when he has been assigned an unpopular job - the gossip and rumor monger, busy keeping the grapevine throbbing with new, usually exagerated or distorted and seldom accurate - the prima donna...practical joker...the alcoholic...the misguided do-gooder... the wearer of halos These are men, natural, normal, healthy and a few unhealthy. The fire officer must bring these men to act as a group. To accomplish this he brings the individuals together by giving them a common purpose. The effective fire officer trains his men well, teaches them the value of their work and makes them proud to be members of the fire service. He must justify their efforts by providing an acceptable purpose that will continue to influence their actions as a group, such as - - the welfare of the community, the public good - the fire service without a blemish - the company record without complaints - perfect inspections - the best company in the department He must also insure that all his subordinates are aware of the purpose of the fire service in their community.

INSTRUCTORS NOTES	TEACHING POINTS
	This can be accomplished by -
	- regulations, bulletins, directives - charts, graphs, reports - surveys showing the effectiveness of each company, battalion or division in the department in providing fire protection to the community
	These are some of the tools and devices. They are not enough, nor do they present the whole picture. The officer must go further.
	The officer should keep his men informed of the standing of the group in relation to the purpose. He will provide his men with all information received pertaining to them at formal or informal meetings.
	When calling a meeting the officer should insure that -
	- the subject matter will be of real interest to everyone - the men are given an opportunity to make a contribution by participating in group thought and action - all personnel are informed that the meeting is being held
	Nothing can cause panic in a group or affect their morale faster than rumors or washroom "scuttle-butt". By keeping his men well informed, the fire officer keeps them from happening. Rumors cannot survive the truth.
	The fire officer should tell his men about their contribution to the common goal. His men want to know where they stand in relation to the group, and they want to be of some value to it.
	When giving orders use team words whenever possible; we, us, our. Almost any order (except during emergencies) can be given in group or team words.
	d. Fair treatment
	People respond emotionally, not rationally, when their self-interest is in jeopardy. The need for fair-play is deep seated in

INSTRUCTORS NOTES	TEACHING POINTS
	the emotional make-up of all men. Favoritism is the greatest of all demoralizers. It destroys the feeling of security in all others. Men fear that their own efforts and worth will not be recognized. The fire officer is human and he may like one man and dislike another, but this must not affect his treatment of his men. His personal likes and dislikes should be consciously put aside when making decisions affecting these men. Fair treatment pays dividends in greater cooperation and efficiency. The fire officer should - - apply rules and regulations fairly and impartially - make decisions fairly and stick by them - plan and make assignments equitably. e. An opportunity to be heard Good firefighters seldom make complaints but the inadequate firefighter can find many causes for grievance. Some men find it difficult to express a grievance due to fear of the officer, timidity, a feeling of inadequacy or other causes. When these types of men fail to receive assistance in the alleviation of their grievances, the frustration of the need to be heard can lead to serious psychological problems. There are the men who are constantly complaining and griping. The fire officer should listen to all complaints and grievances making a point to listen attentively to ideas or suggestions that affect the welfare, efficiency or morale of the group or any individual in it. If the condition reported should be corrected, can be corrected, action should be taken immediately.

INSTRUCTORS NOTES	TEACHING POINTS
	The officer should keep in mind that in every working situation, every man wants to feel free to express himself in three areas:
	a. Grievances, gripes and complaints b. Suggestions for the improvement of his job c. Changes that affect him
	Every officer should -
	- have a definite grievance policy and publicize it - give your men a chance to get their suggestions to you, making it possible for them to be passed up the line for serious consideration - when possible work out some way of giving your men a voice in formulating or carrying out change - give advance notice of changes which affect your men - explain why, how, when - LISTEN to comments, hear them out
	f. Importance of maintaining status
	Officers must always appreciate the tremendous importance of status among the men.
	There is no clear-cut formula for understanding people. The real reason for many human actions are masked because rather than "lose face", even in his own thoughts, a person may use one of several "defense mechanisms". By using these techniques a man can fool himself into a form of behavior which is more acceptable to society and therefore prevents him from losing face.
	DEFENSE MECHANISMS - The psychological explanations for the mechanisms should be familiar to every leader so that he can recognize them.
	Sublimation - channeling primitive energy into socially accepted activity.
	Rationalization - explaining plausibly, yet incorrectly, to ourselves why we think, feel or behave as we do.

INSTRUCTORS NOTES	TEACHING POINTS
	Projection - assigning to other persons, possibly in disguised form, the wishes and fears we cannot admit openly we have. Conversion - Forcing threatening impulses into functional disorders. Every firefighter has six basic needs which must be satisfied and the alert officer will recognize them and act accordingly. - the need for recogntion as an individual - the need for accomplishment - the need for fair treatment - the need to be heard - the need to be part of a group - the need to maintain status

WISCONSIN FIRE SERVICES TRAINING
LESSON PLAN

CODE-FO-2-B
Time

COURSE: FIRE OFFICER

LESSON: THE FIRE OFFICER AS AN ADMINISTRATOR

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

II. THE FIRE OFFICER AS AN ADMINISTRATOR

When the word administrator is applied to fire protection, it means the person who manages, directs, or executes the affairs of the fire department.

Administration in this sense pertains to the persons who have the responsibility for executing:

a. Laws
b. Rules
c. Regulations
d. Management of the fire department policies

A fire department administrator is any officer who has the right to administer and the power to execute.

1. Administrative Responsibilities

The fire chief is the head of administration in the department. For efficient operations he depends on his subordinates to administer certain phases of fire department functions. Fire officers of different ranks have different administrative responsibilities. The main responsibilities of a company officer are:

a. To manage a fire station, supervise the maintenance of quarters, apparatus and equipment
b. To train or drill men in fire fighting practices, procedures and policies
c. To be familiar with the district to which he is assigned
d. To respond to fire alarms and direct the personnel of his unit in fire fighting operations
e. To supervise company fire inspections and surveys
f. To possess detailed knowledge of pre-fire plans so that he will be able to size up situations and direct procedures.

INSTRUCTORS NOTES	TEACHING POINTS

The duties of a chief officer reveals different characteristics. The good company officer does not always become an efficient chief officer for several reasons -

- he may lack an appreciation of or qualifications for his new responsibilities
- he may be reluctant to give up the company officer responsibilities he is familiar with
- he may be the type of officer who has to perform his subordinates' duties instead of directing them or permitting them to use their own initiative.

The main responsibilities of a chief officer are:

g. To supervise fire companies and stations within a certain district
h. To maintain discipline and training standards within his district
i. To possess a knowledge of fire hazards and fire causes
j. To be familiar with the property within his district with particular attention to target hazards
k. To maintain a working knowledge of adjoining districts for multiple alarm assignments
l. To possess adequate knowledge of pre-fire plans for all fire companies operating within his district
m. To provide good public relations.

Both company officers and chief officers have duties other than those listed but the listing of the main duties was made to compare their administrative functions. The non-fire fighting duties of these officers will be discussed in Lesson FO-3.

The degree to which a fire officer serves as an administrator is related directly to his rank. The higher the rank, the more pronounced his administrative duties become.

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-2-C
TIME

COURSE: FIRE OFFICER

LESSON: DESIRABLE QUALIFICATIONS FOR OFFICERSHIP

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

III. DESIRABLE QUALITIES FOR OFFICERSHIP

The responsibilities of a fire officer are so important that certain qualities are desirable when a fire fighter is selected to become a fire officer or when an officer is selected for promotion to a higher rank.

1. Desirable Characteristics

A characteristic is a trait, quality, or property that identifies an individual. Some favorable human characteristics are -

- loyalty
- honesty
- determination
- appreciation
- ambition

Some of the unfavorable human characteristics are -

- contrariness
- egotism
- selfishness
- impulsiveness

An attitude is a state of mental or emotional readiness for some form of activity and it is influenced by how a person feels toward something or someone. People respect those in whom they have confidence and their attitude often affect the degree of respect.

Characteristics that may be desired in a fire officer will reflect the personality of those listing them. For this reason, it is suggested that each department set up its own desired characteristics to guard against setting up requirements for a perfect fire officer.

INSTRUCTORS NOTES	TEACHING POINTS

Some of the general characteristics desired are:

a. A spirit of service
b. A sincerity of purpose
c. A devotion to duty
d. A determination to improve
e. A favorable attitude toward progress
f. A sense of fair play
g. A well-balanced personality
h. A mentally alert mind
i. A physically fit body
j. A good personal appearance

2. Desirable Qualifications

Men selected for promotion to fire officers should be selected because they are good officer material, not because they qualify in their present position.

Some of the basic qualifications for fire officers are - that they:

k. Have leadership ability
l. Have an aptitude for fire service officership
m. Have served a reasonable time in the rank of firefighter and should have served a reasonable time as an officer below the rank for which he is being considered for promotion. (Time should be set by authority having jurisdiction.)
n. Be well trained in the techniques of fire fighting practices
o. Be able to instruct in the techniques of fire fighting practices
p. Have a thorough knowledge of the water system in his district and city
q. Be familiar with the buildings within his area of responsibility
r. Be familiar with departmental pre-fire plans

Based upon the qualifications listed and the general desired characteristics, a fire officer with proper guidance, formal officer training, and cooperation from other officers should be able to progress and lead the men under his supervision.

INSTRUCTORS NOTES	TEACHING POINTS
	3. The Fire Officer's Authority Authority is a legal or rightful power exercised by a person by virtue of his office or trust. If a fire officer represents a municipality, his authority comes from the people of the local community, but if a fire officer represents a state, his authority comes from the people of the state. Individual authority will be discussed in Lesson FO-3 under the headings of: a. The Company Officer's Authority b. The Chief Officer's Authority c. The Fire Chief's Authority

INSTRUCTORS NOTES	TEACHING POINTS

References - Suggested reading for Lessons PO-2-A-B-C

The Fire Department Officer - 2nd Edition - IFSTA

Published by - The Department of Fire Protection
Oklahoma State University
Stillwater, Oklahoma

Fire Officer's Guide to Leadership - 1963

Published by - Walter B. Patterson, A.B., M.A.
Arthur R. Pell, A.B., M.A.
111 Dietz Street
Hempstead, N.Y. 11550

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-3-A
TIME

COURSE: FIRE OFFICER

LESSON: NON-FIRE FIGHTING ACTIVITIES

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

I. Non-Fire Fighting Activities of the Fire Officer

The three functional phases of the fire service, preparation, anticipation and action, were discussed in lesson 1-B of this series.

During the preparation and anticipation phases, the fire officer;

a. Studies departmental pre-fire plans.

b. Assists in formation of policy.

c. Provides for maintenance of apparatus and equipment.

d. Trains men under his supervision.

e. Schedules routine work and special assignments.

These functions, basically the supervision of the non-fire fighting functions of the department, form a major portion of the non-fire fighting duties of the fire officer.

The average citizen in a community generally believes that fire fighting is the only job the fire department performs, giving little or no consideration to the wide and varied range of non-fire fighting activities they perform between alarms.

The primary responsibilities of the company and chief officers, and the competing demands on the time of all personnel on duty in the stations, must be taken into consideration to effectively perform the non-fire fighting functions of the department.

INSTRUCTORS NOTES

TEACHING POINTS

The chief of the department or a selected member of his staff, should inform the public of these assitional functions which are performed by his department

Many departments utilize the following media in informing the public of their activities.

a. Newspapers

b. Radio and Television

c. Speeches

d. School Programs

e. Open Houses

f. Demonstrations

g. Publication of Annual Reports

Keeping the public properly informed usually results in good public relations and is a good management policy.

1. Receiving Assignments and Orders

An assignment or order in the fire service may be given in two ways depending upon its purpose.

If the purpose of the assignment or order is:

a. to prepare for an expectancy

b. to perform a special service

c. to remedy a situation

it is generally:

a. routine and periodical

(1) posted in writing

(2) given orally and discussed

During emergencies orders and assignments are:

INSTRUCTORS NOTES	TEACHING POINTS

(1) given orally

(2) performed promptly as time does not ordinarily permit their discussion.

The execution of all orders and assignments are supervised by the fire officer.

2. Understanding Assignments and Orders

When receiving orders or assignments they must be understood completely.

a. give orders in calm, clear tone of voice

b. use terms understood by all personnel

c. to prevent misunderstanding have order repeated by person receiving it

d. discuss written orders or assignments with personnel to insure they are understood

3. Executing Assignments and Orders

An order merely tells "What" is to be done.

The "How" phase is accomplished by fire officers who have learned to accomplish their assignments thru;

a. pre-fire planning

b. training and drilling the men under them to perform the required techniques effectively

c. previous experience

d. understanding of problems

Executing an order then is not just relaying it, but rather giving the orders to carry out the individual procedures necessary to accomplish it.

4. Company Officer's Authority

A company officer has the authority to the things that his superior officer delegates

INSTRUCTORS NOTES	TEACHING POINTS

to him. His power becomes:

a. delegated authority

b. limited to scope of functions he performs

c. condemn a structure

d. dispatch additional equipment beyond a pre-fire plan

e. hire or fire personnel

f. purchase new equipment

g. order administrative functions

The company officers duties are primarily operational with limited administrative responsibilities, and his authority is exercised within the structure of his command.

II. Non-Fire Fighting Functions of the Company Officer

The non-fire fighting functions of a company officer begin with the state of preparedness of his men, apparatus and equipment.

1. <u>Station Officer and Company Officer</u>

Company Officer

a. commands a fire company or on-duty platoon

b. may have other duties beyond command of a company such as station officer.

(1) generally senior fire captain in a station housing more than one company

Station Officer

a. is responsible for all house duties, apparatus and equipment maintenance schedules

INSTRUCTORS NOTES

TEACHING POINTS

b. consults with other company officers in station on distribution of work among firefighters on duty.

c. is responsible for the welfare of personnel and condition of apparatus and equipment

d. delegates individual company supervision to officers in his station

e. makes decisions on questions of policy affecting station operations

f. should represent the fire department to all citizens entering his station

2. Keeping The House In Order

A fire station is not only a building where fire apparatus and equipment are kept between fires, but in most cases a home for firefighters during their tour of duty.

Keeping the house in order is:

a. general housekeeping

b. supervision of personal welfare

c. apparatus maintenance

All of which is accomplished by the firefighters under the leadership and supervision of the fire officers

A. Personal Welfare

Each firefighter is responsible for his:

(1) personal hygiene and sanitation

(2) General cleanliness

(3) personal appearance

a. wearing regulation work clothes in station

INSTRUCTORS NOTES

TEACHING POINTS

b. wearing protective clothing while engaged in firefighting duties

c. wearing dress uniform for special public details

B. Station Maintenance

Good maintenance requires the cooperation of all personnel, officers and firefighters in the station.

Station maintenance can be divided i into three parts:

(1) daily maintenance

(2) weekly maintenance

(3) periodic maintenance

Daily Maintenance

a. Sweep all floors

b. Mop all floors in toilets, locker room and kitchen

c. Disinfect toilets, lavatories and bath facilities

d. Make all beds

e. Maintain a clear and clean driveway

f. dust all furniture

Weekly Maintenance

g. Mop all floors

h. Clear cob-webs and dust

i. Cut grass and remove rubbish

j. Wash all windows

Periodic Maintenance

k. Clean, service all electric motors

INSTRUCTORS NOTES

TEACHING POINTS

l. Wash woodwork

m. Check and service driveway doors

n. Clean all light fixtures

C. Apparatus Maintenance

Manufacturers and engineers do not recommend daily starting of the engine in quarters, but when it is done the engine should be thoroughly warmed and permitted to run for several minutes after it is warm.

To maintain an apparatus in good operating condition it must be kept clean and inspected regularly.

Daily Maintenance - After Runs

a. Check crankcase oil and keep oil at proper level

b. Observe water level in radiator

c. Check all batteries

d. Check all visible and audible warning signals

e. Check all fuel tanks for fuel level

f. Check booster tanks for water level

g. Check each tire for cuts, breaks and inflation

h. Pressure test all brakes by operating foot pedal

i. Clean apparatus body

Weekly Maintenance

j. Check transmission oil level

k. Check differential oil level

l. Check master brake cylinder fluid level

m. Check fan and generator belts

n. Check battery terminals and cables

INSTRUCTORS NOTES

TEACHING POINTS

o. Operate valves in cooling system

p. Check drains and hose connections

q. Check drive shaft and universal joints

r. Start motor and observe oil pressure and idling speed

s. Clean all motors and underneath chassis

t. Check all loose nuts, studs and pins

u. Check the fire pump using proper procedure

v. Check the aerial ladder using proper procedure

Periodic Maintenance

a. Clean air filter and change oil

b. Drain and refill crankcase (every 3 months)

c. Clean sludge from crankcase (every 6 months)

d. Clean sediment bowls and check fuel pump

e. Clean sparkplugs and set the gap

f. Lubricate the chassis, distributor, starting motor, water circulating pump, generator and alternator and steering gear

g. Service test fire apparatus

D. Equipment Maintenance

Equipment carried by fire apparatus that is not permanently mounted on the engine or truck.

Daily Maintenance - After Runs

Check all portable extinguishers for service

Check all hose loads for service

INSTRUCTORS NOTES

TEACHING POINTS

Check all ladders for service

Check all nozzles and appliances for service

Weekly Maintenance

Remove all appliances from apparatus and clean

Check air or oxygen pressure in protective breathing apparatus

Check all hand and flash lights

Start all portable motor driven equipment and permit them to warm up.

Periodic Maintenance

Remove all hose from fire apparatus, check for faults and re-load

Service test all fire hose

Remove all ladders from their racks and clean

Lubricate all motor driven or hand operated appliances according to specifications

a. Portable pumps, portable generators, gear driven or movable master stream devices and booster reels

Flush the pump and booster tank

3. Planning To Avoid Conflicting Schedules

The fire officer being aware of the routine non-fire fighting functions required of his on-duty personnel, must plan his work schedule to allow for the special functions that may be assigned to his company during the year;

Fire Prevention Week Activities

Clean-Up Week Activities

Open Houses

INSTRUCTORS NOTES

TEACHING POINTS

Parades

Public Details

and must also coordinate his schedule with other fire officers or chiefs of the bureaus, to effectively carry out:

Company Training

Company Fire Inspections

4. Running Cards, Records and Reports

When departmental pre-fire plans provide running cards to regulate the response of each fire company, the company officer must:

Study and understand the pre-fire plans and running cards to insure proper response by his company.

Train his men to know their running card assignments.

Report changing conditions affecting for apparatus response noted during company inspections.

The company officer has a responsibility to maintain records and reports pertaining to the activities of his company, such as;

COMPANY

Roster of men assigned
Sick, injury or leaves
Vacation leaves
Details of members
Record of personal fire fighting equipment

DRILLS

Apparatus
Equipment
Radio Equipment
Station

RECORDS & REPORTS

Fire report
Fire inspection report

INSTRUCTORS NOTES | TEACHING POINTS

Company reports
  Pre-fire planning
  Gas and oil received, etc.
Chief's reports
General orders

INVENTORY ASSIGNED

Apparatus
Equipment
Hose
Station Equipment

REPAIRS

Apparatus
Equipment
Hose
Station

DISTRICT INFORMATION

Location of sprinklers and standpipes
Hydrant Location and servicing
Obstructed or blocked roads

These records are kept in either a book generally referred to as "Company Journal" or "Day Book" or file folders. Either method provides a central record for each fire station and a control for the company officer. Procedures for their use should be uniform throughout the department.

5. Training Periods and Requirements

Basically, a company officer has the following non-fire fighting functions to perform:

Planning operations and jobs as they should be done and administering departmental pre-fire plans.

Training or drilling men to do the jobs as they are planned.

Supervising men to see that they do the jobs as they are trained to do them.

INSTRUCTORS NOTES	TEACHING POINTS
	References - Suggested reading for Lesson FO-3 The Fire Department Officer - 2nd Edition - IFSTA Published by - The Department of Fire Protection Oklahoma State University Stillwater, Oklahoma Municipal Fire Administration - 1967 - ITMA Published by - The International City Managers' Association 1313 East 60th Street Chicago, Illinois 60637

WISCCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-4

COURSE: FIRE OFFICER

LESSON: NON-FIRE FIGHTING ACTIVITIES

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

I. The Chief Officer

Chief officers are those in a fire department with a rank higher than company officer but less than a fire chief.

Assistant Chief

Deputy Chief

District Chief

Battalion Chief

Superintendent of Repair and Maintenance

Superintendent of Alarm Bureau

Chief, Bureau of Training

Chief, Bureau of Fire Prevention and Investigation

1. The Chief Officer's Authority

The chief officer is a direct representative of the fire chief and receives delegated authority:

a. exercised within the scope of functions he is to perform

b. to perform such staff functions as may be required

c. to command a series or group of companies and provide proper leadership

d. to delegate the responsibility of compnay operations to the officers commanding them

INSTRUCTORS NOTES

TEACHING POINTS

Basically the chief officer's authority lies within his command and he is responsible for the proper operation of that command.

2. Chief Officer - Leadership

Leadership in the Fire Service includes:

a. Planning schedules

b. Coordinating activities

c. Training

d. Supervision

e. Directing personnel in fire fighting operations

f. Handling problems

g. Correcting grievances

h. Counseling of personnel

i. Proper relationship between officers and men

One of any fire officers major responsibilities is handling problems. Good leadership requires fair, prompt and careful handling of all problems in his unit.

When faced with any problem it is important that the officer give it a systematic analysis.

DETERMINE YOUR OBJECTIVES - (Generally the objective is to run an efficient unit, prepared to fight fires at all times)

- At what are you aiming?

- How does this problem fit into your objectives?

GET ALL THE FACTS

- Review the record.

- What rules apply?

INSTRUCTORS NOTES

TEACHING POINTS

_ Talk with the man or men concerned

- What is his story? Get ALL of it. Are there extenuating circumstances?

- Get opinions and feelings. (Facts alone do not always give the whole picture. Often opinion or emotional attitudes play an important part in the story.)

WEIGH AND DECIDE

- Fit the facts together

- Consider their bearing on each other.

- What possible actions are there. (Try to have several alternatives to consider.

- Check practices, policies, and precedents

- Consider your objective and the effect on the man, the company, the department.

- Don't jump to conclusions.

TAKE ACTION

- Are you going to handle this yourself?

- Do you need help in handling?

- Should this be referred to your superior?

- Watch the timing of your action.

CHECK RESULTS

Watch for changes resulting from your action in;

- The organization.

- The attitude and relationships of your me

DID THIS ACTION HELP THE COMPANY AND THE DEPARTMENT.

GRIEVANCES

One of the most common ways men have of expressing their problems is their problems is

INSTRUCTORS NOTES

TEACHING POINTS

through the medium of grievances.

A grievance is a sign that something is irritating to a man.

It is the responsibility of the officer to hear, consider, and, if possible, do something about the grievances arising from the men in his command.

CAUSES

The cause of most grievances lies in poor adjustment.

- Between a man and his working conditions.
- Between a man and the work he is doing.
- Between a man and his fellow workers.
- Between a man and his superior officer.
- Within the man himself, because he is a poorly adjusted individual.
- Sparked by a combination of any of the above.

HANDLING GRIEVANCES

If the officer is to handle grievances effectively, he must:

- Have the confidence of his men so they will feel free to come to him with their gripes and complaints.
- Handle these complaints fairly and with no condescension.
- Encourage a man to talk using the officer as a "safety valve" to get the gripe off the mans chest. (Talking is, in part, a type of therapy called CATHARSIS.)
- Get all the facts by not disputing or blocking the man's statements.

INSTRUCTORS NOTES

TEACHING POINTS

The officer must look for the roots of a grievance, thoroughly study it, analyzing the causes before he can take effective action to correct it. To assist him in accomplishing the above it is suggested that he:

- let the man talk, get all the facts.

- be absolutely fair with every man.

- be business-like in handling discussions.

- be definite in giving answers, avoid stalling. If the officer cannot answer he should bring the matter to the attention of a superior officer who can.

- follow through on decisions.

- know when to say "no" and how to say it and maintain good relations.

- help the man "save face" if he has made a mistake.

- if you have made a mistake, admit it, and correct it promptly.

- never argue or, under any circumstances, take abuse from a subordinate

COUNSELING OF MEN

Counseling, not to be confused with reprimand, is a discussion used to improve a man's techniques, change his behavior, or to influence his feelings.

A good way to start a conversation of this kind is to find some common ground, some naturally acceptable incident, such as:

- a comment on the man's skill, punctuality or neatness.

- a suggestion as to ways of improvement on his job.

INSTRUCTORS NOTES	TEACHING POINTS
	- an explanation of the importance of the work being done. - a compliment on the good work the man had done. - a question on how a particular job can be done. - a question as to the man's previous experience on a similiar task or job. In counseling, the officer should get the man to while he LISTENS. The officer should look for hidden reasons for the man's inefficiency or poor behavior such as: - family trouble - poor health - financial difficulties In conducting counseling interviews the officer should note the following suggestions: - Be approachable. - Attain the right attitude. - Be impartial and fair. - Help the man to be at ease. - Let the man do the talking. - Keep control of the interview. - Keep the interview on a business basis. - Try to be objective, eliminate your prejudices. - Do not argue. Keep your temper. - Try to prevent embarrasing the man. - Do not make promises you cannot keep.

INSTRUCTORS NOTES

TEACHING POINTS

- Keep the man's friendship.

- Arrive at a decision.

- Take action when action is indicated.

RELATIONSHIP BETWEEN OFFICERS AND MEN

How friendly should a good fire officer be with his men? Should he keep himself remote from them as:

- Maintaining distance assures that his men will be fairly treated so that no one man will become a favored friend.

- Men will have more respect for their officer and will obey him without hesitation or argument.

- An officer will not let personal friendship influence group discipline and efficiency ratings.

Or should a friendly relationship be maintained so that:

- An officer will understand his men better if he is more friendly with them.

- He will build up a better team and the men will work more closely and therefore more efficiently.

- A good officer will not let personal friendship interfere with his duties in any case.

As in any human relations situation, the answer lies in the middle ground.

An effective fire officer will:

- Be friendly and learn to understand the men under his supervision.

- Associate with the firefighters to broaden his knowledge of their individual charateristics.

- Limit his off-duty associations with his subordinates.

INSTRUCTORS NOTES

TEACHING POINTS

II. NON-FIRE FIGHTING FUNCTIONS - CHIEF OFFICER

Helping to plan unit operations and enforcing plans and policies are probably the most important non-fire fighting functions of the chief officer.

In order to do a good job of planning and fire fighting, a chief officer should know the different phases of fire protection.

1. Knowledge of Buildings
   - a. Types of buildings.
   - b. Construction features.
   - c. Occupancy and contents.
   - d. Tactical vantage points.
   - e. Private fire protection facilities.
   - f. Exposure problems.
2. Knowledge of Facilities
   - a. Fire Apparatus.
   - b. Fire Equipment.
   - c. Private Protection Devices.
   - d. Special Apparatus.
   - e. Manpower
   - f. Water Distribution System.
   - g. Fire Alarm System.
   - h. Rescue Equipment.
   - i. Public Utilities
   - j. Arson detection.
   - k. Fire inspections.

INSTRUCTORS NOTES

TEACHING POINTS

1. Bureau of Fire Prevention and Investigation.

m. Bureau of Training.

3. Knowledge of Methods

The Chief officer must be completely familiar with the departments procedures and pre-fire plans for him:

- To strategically position available fire apparatus.

- To provide adequate fire protection and life safety.

- To make the best use of all available facilities and manpower.

4. Records and Reports

Records and reports are non-fire fighting functions of a chief officer.

A chief officers report should contain items similiar to those listed.

FIRES - Causes, Loss, Injuries, and Others

EQUIPMENT - Hose used, Hose Testing, Recommendation

PROFESSIONAL DEVELOPMENT - Training per company, Meetings attended, Recognition and Others

INSPECTIONS - Number, Type, Hazards and Others

SERVICE CALLS - Resusciator, Public service, Rescue and Others

APPARATUS - Testing, Repairs, recommendations

PERSONNEL REPORT - Sick leave, Absentees, Outstanding individuals and Others

FIRE STATION UPKEEP - Repairs, Conditions, Recommendations and Others.

INSTRUCTORS NOTES	TEACHING POINTS
	References - Suggested reading for Lesson FO-4 The Fire Department Officer - 2nd Edition - IFSTA Fire Department Facilities, Planning and Procedures 2nd Edition - IFSTA Published by - The Department of Fire Protection Oklahoma State University Stillwater, Oklahoma Fire Officer's Guide To Leadership Walter B. Patterson, A.B.,M.A. Arthur R. Pell, A.B., M.A. Published by - Patterson and Pell 111 Dietz Street Hempstead, N.Y. 11550

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-5
TIME

COURSE: FIRE OFFICER

LESSON: NON-FIRE FIGHTING ACTIVITIES

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

I. The Fire Chief

The fire chief is the highest ranking and commanding officer of a fire department.

In some departments the fire chief is the top administrative officer and ranking fire fighting officer. In others, a commissioner or director may be the administrative head of the department.

A fire chief should have served a reasonable time as an outstanding company or chief officer so that he will understand have an appreciation for the duties and responsibilities of his subordinates.

1. The fire chief's Authority

The fire chief's authority comes from the governing body he represents:

- Municipal
- Private
- Industrial
- State or Federal Governmental Agencies

His authority is stated in their:

- Charters
- Ordinances
- Policies

The fire chief is responsible for:

- The leadership and administration of the department.
- Delegation of authority and responsibility
- Understanding the policies, ordinances or charters under which he serves.

INSTRUCTORS NOTES	TEACHING POINTS

II. Things a Fire Chief Should Keep In Mind.

1. The Slight Edge

The fire chief must be willing to give extra effort above that given by most officer

Effort is defined as; "either physical mental exertion of an individual to perfect an act."

Effort may be:

Minimum - doing enough to get by

Average - doing only what is expected

Extra - doing beyond the scope of averag

2. Difficulty In Getting Started

The fire chief must be a "self-starter".

- Utilizing his time efficiently

- Starting projects promptly

3. The Ever-Changing Conditions

The fire chief must be aware of the ever-changing conditions and how they influence fire protection.

- Changes in building construction

- Building materials

- New fuels

- Overtaxing of water systems

- Need for additional equipment/manpower

4. The Power of Influence

No one has yet been able to accurately evaluate the power of human influence, influence deals with the mind.

Three of the major forces of influence ar

EXAMPLE - the fire chief should set an example by doing the things he advocates enthusiastically

EXPECTANCY - The personnel of the department should be expected to conduct themselves, perform their duties in a manner that will result in favorable departmental relations.

TRADITIONS - attitudes, ideals and accomplishments handed down thru the history of the fire service. The heroic efforts of firefighters to protect life and property has developed many traditions.

5. The Democratic Policy

Using a democratic policy with all fire officers understanding the policies of the department, will result in:

- Development of efficiency
- Improvement of morale
- Emphasizing authority

6. Short Range Problems and Long Range Goals

The ability to recognize short range problems in the light of long range goals, is very important to the fire chief.

Most of the short range problems can be solved by those who have been delegated the responsibility of handling them.

The fire chief must realize the job he delegated:

- Will not be done exactly as he would have done it
- That he cannot control every phase of the activity
- That he must judge its solution by the results accomplished, not the methods used.

INSTRUCTORS NOTES	TEACHING POINTS
	A statement should be prepared describing what the fire department hopes to accomplish during a minimum future period of 5 to 10 years. 5 Years - Budget requests - Men and Equipment - Capital costs a. by use of reserve funds b. borrowing funds 10 Years - Indicates how general long range programs of the fire department and community will be felt. - Cost of capital items (equipment) provided at lowest per year cost - Proper enforcement of building and fire prevention codes a. reducing the quick burning combustible features of a community b. requiring private protection equipment (Automatic Sprinklers, etc.) in buildings of excessive area or with high hazard contents c. controlling other defects creating high conflagration hazards or extremely difficult fire protection problems These efforts expended in long rang programs should assist in keeping the costs of fire protection at a reasonable level. 7. <u>Some Examples of Fire Chiefs</u> MASTER OF DETAILS - Plans and has a plan for every activity in his department - Does not delegate sufficient authority or responsibility - Seldom gets anything done

INSTRUCTORS NOTES	TEACHING POINTS
	- Wants everything worked out in detail - Frequently works on a plan so long it is never put into effect THE COORDINATOR OR ORGANIZER - Divides plans into sections - Expertly delegates responsibility - Discusses plans with those who are to implement them - Coordinates all efforts into a unified project THE PROBLEM SOLVER - Is good at solving problems - Often risks humiliating personnel in telling how problem was solved - Recognizes abilities of his men - Will praise or reprimand as conditions warrant - always DEMANDS exactness THE PEOPLE-MINDED - Is usually a good psychologist - Is concerned what people think - Maintains loyalty to his men and expects it from them - Will not tolerate inefficiency - Is interested in the welfare of his men THE TARGET-MINDED - Likes to get things done

INSTRUCTORS NOTES	TEACHING POINTS
	- Has long range goal he must achieve - Does not bother with petty details - Concerns himself with final result - Considers public opinion as main tool to get things done - Believes the current target project is the most important phase of fire protection THE DO-LITTLE - Always intends to start a project but never finds time - Attends conferences and schools but keeps information locked in head or desk - Generates very little activity in department

INSTRUCTORS NOTES	TEACHING POINTS
	References - Suggested reading for lesson FO-5 The Fire Department Officer - 2nd Edition - IFSTA Published by - The Department of Fire Protection Oklahoma State University Stillwater, Oklahoma Management of a Fire Department NFPA No. 4B 1968, Paragraph 42 Published by - National Fire Protection Assn. International 60 Batterymarch Street Bostona, Mass.

WISCONSIN FIRE SERVICE TRAINING

CODE-FO-6
TIME

COURSE: FIRE OFFICER:

LESSON: NON-FIRE FIGHTING FUNCTIONS

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES

TEACHING POINTS

I. Non-Fire Fighting Functions of the Fire Chief

A fire chief must look at the fire protection problem as an overall function and he must rely on his chief officers and company officers to administer the affairs within their jurisdiction.

In defining administration, the following items would probably be included:

- Communications
- Making Decisions
- Delegating Authority
- Activating
- Problem Solving
- Planning

1. Communications

Communication is any means by which information is given or received. Some of the mediums used in accomplishing this are listed below.

- Reports
- News Letters
- Staff Meetings
- Radio
- Television
- Memorandums

INSTRUCTORS NOTES	TEACHING POINTS
	- Private Letters - Verbal Expression - News Articles The means used to communicate a particular form of information may depend upon the level at which the information is directed. Communications directed to a superior would probably be by: - Report - Private Letter - Verbal Expression Those to subordinates by: - Memorandum - News Letter - Staff Meeting Between officers of equal rank or on a horizontal plane by: - Memorandums - Verbal Agreements To the general public by: - Television - Radio - News Articles Communications should state clearly and concisely what is meant. One way of accomplishing this would be to check them against the following items: - To whom is this directed? - Who is the originator, is it a reply or is it a report?

INSTRUCTORS NOTES	TEACHING POINTS

- Is the subject matter informational, observational or creative?

- Does the content reflect friendly, hostile, critical, factual or impersonal attitudes?

When a fire chief requires accurate information from his officers, they will in turn, require accurate information from the firefighters

If the fire chief is not receiving the information he needs it is possible that he is not keeping his officers and men and the public properly informed.

The following items can be used as a check list of a communications system to determine if adequate results are being obtained.

- does the information say what is meant or

- Is inaccurate information being given

- is information from the chief delayed in reaching the officers and men

- is the best use being made of written reports, discussions and staff meetings.

- do reports need to be revised

- do methods need changing

Most fire chiefs present an annual report of fire department activities to their governing bodies and the public.

While the annual report should be prepared and presented, it does have some disadvantages.

- Reviews activities and needs of the department ONLY once a year

- Is generally bulky and time consuming to read

- Because the people receiving it merely scan through it, not thoroughly understanding its contents, the report has not done the most good for the department

INSTRUCTORS NOTES	TEACHING POINTS

The monthly report accomplished all the things the annual report does and has some other district advantages.

- Formally places the name "Fire Department" before the governing body 12 times each year
- It is brief and the fire chief should not hesitate to have it read
- Activities that might pass unoticed in an annual report are "spotlighted"

Information for a monthly report of this type should be obtained from the chief officer's monthly reports as outlined in Records and Reports, page 8 Lesson 4 of this series.

Communications in the form of formal proposals usually contain information that is different from that found in a report of activities.

Formal Proposals should be made in writing so that:

- Every item can be clarified
- Permanent record of proposal will usually encourage a written answer

Refrain from verbal proposals as:

- The most important facts are often not understood, or even heard

2. Making Decisions

Making a decision consists of selecting the best course of action under given conditions and circumstances.

In non-emergency situations decisions usually can be considered long enough to permit proper evaluations, while firefighting decisions must be made in a much shorter period of time.

There are two ways that most common decisions are made:

- The Size Method

INSTRUCTORS NOTES

TEACHING POINTS

Are planning methods well organized?

Can they be explained to others?

Are planning skills in officers developed?

Are others consulted in preparing long range plans?

Long Range plans must be thought out in detail before the project is started. Some of the problems making long range planning difficult are:

- Immediate task interruption
- Insufficient time
- Short-range carryover

To aid in overcoming these problems the fol following planning pattern is furnished as a guide.

- The name of the project

- The purpose of the project

- Personnel available for the project

- Facilities available for the project

Methods by which different phases of the project may be carried out

- Estimated cost of the project

- Schedules and sequences of performing the project

- Dead-lines and sub-goals

4. Activating

Activating is giving orders and implementing a plan.

The technique of giving orders is simple if a few basic rules are followed.

- Be sure the order is understood

INSTRUCTORS NOTES	TEACHING POINTS

- Divide large assignments into smaller sections

- Keep orders current by reviving interest and emphasizing goals

- Make orders emphatic by pinning down responsibility and insisting on a follow-through

When selecring the personnel to activate ar and implement his plans, the fire chief should consider:

- Who is available

- Who is in line for the job

- Who will best understand

- Who is capable of best performance

After the order is given and the assignment made:

- Discuss the instructions briefly

- Allow the personnel selected to use their own initiative and techniques in accomplishing the task

Combining these suggestions with an opportunity for the officers to participate in the planning sessions, will in providing a source of motivation to the personnel involved.

5. Problem Solving

Solving a problem is finding the correct solution by providing a reasonable explanation that is not complicated.

Problems generally fall into catagories:

- Indentification Problems

a. What
b. Why

- Method Problems

a. How

INSTRUCTORS NOTES	TEACHING POINTS

A problem involves unknown factors as does a task, but the two should not be confused.

In solving problems we must be aware:

- That gradually changing conditions sometimes hide a problem

- That in some instances, events develop so slowly, the problem is present befo: it is recognized

There are certain steps that should be taken when solving a problem;

1. Decide if it is a problem of method or identification

2. Gather appropriate facts

   a. For problems of identification, look for facts that help you determine the cause of the prob- lem. Ask, what, why, when, wher(

   b. For problems of method, look for facts that help you determine th(cause of the problem. Ask, what why, when, where.

      (1) People, officers and men, your superiors and specialis: such as the rating bureau engineers or the fire servic(training staff.

      (2) Tools and equipment.

      (3) Solve the problem

6. <u>Delegating Authority</u>

Every fire chief has more responsibiliti than he can take care of himself, therefore he must delegate authority to personnel qualified to perform the various tasks.

Authority should be delegated to permit the uninterrupted operation of the department.

- During the chiefs absence

INSTRUCTORS NOTES

TEACHING POINTS

- When emergencies arise warranting such action

Some examples of chiefs authority which should not be delegated include:

- Suspending from office or rank
- Taking other disciplinary action
- The responsibility of overall control
- Assigments involving governmental classified information

Delegating authority further develops -

- Teamwork
- A sense of responsibility
- General understanding
- Job satisfaction

In delegating authority the fire chief shou

- Brief his subordinates on the facts and importance of the assignment
- Define responsibilities
- Advise the members of the department that they are expected to cooperate with the individual

The delegation of authority and responsibility must be kept under control by follow-up procedures and through progress reports.

7. Summary of Non-Fire Fighting Functions

The foregoing discussion of the non-fire fighting activities of fire officers covers the periods of preparation and anticipation, during which the basic groundwork for fire protection may be planned and provided.

The Company Officer is responsible for:

- The personal welfare of the men under his supervision

INSTRUCTORS NOTES	TEACHING POINTS
	- Maintenance of stations - Proper care and maintenance of apparatus and equipment - Preparation and maintenance of required reports and records - Instructing and drilling company The Chief Officer has a responsibility to - Consider personal and group needs - Coordinate activities - Supervise training - Maintain adequate knowledge of the buildings and fire protection facilities in his area - Determine causes of fire and recognize arson - Know and be able to administer departmental methods, techniques and pre-fire plans effectively - Prepare required reports The Fire Chief should; - Set an example by doing the things he advocates - Expect his subordinates to do their best and inform them of this fact - Maintain pride in the department and the traditions of the fire service through his officers - Delegate authority and responsibility - Maintain an effective line of communication

INSTRUCTORS NOTES	TEACHING POINTS
	References - Suggested reading for Lesson FO-6 The Fire Department Officer - 2nd Edition - IFST Published by - The Department of Fire Protection Oklahoma State University Stillwater, Oklahoma

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-7
TIME

COURSE: FIRE OFFICER

LESSON: FIRE FIGHTING ACTIVITIES

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

I. Fire Fighting Activities of The Fire Officer

Fire fighting activities constitute the ACTION phase of fire department functioning.

Here the fire officer must:

- Make decisions
- Apply plans
- Build defenses
- Supervise fire ground activities

1. Distribution of Fire Fighting Force:

A fire compnay is defined as a basi fire fighting unit organized around a piece of apparatus.

The number of personnel assigned to company is determined by the number required to efficiently operate its apparatus.

Fire companies should operate according to:

- The pre-fire plans for which trai
- The methods and techniques of the department

and be properly led by a trained officer to achieve maximum effectiveness.

A fire fighting activity requires coordinated efforts by all units for efficient fire control and extinguishment.

INSTRUCTORS NOTES | TEACHING POINTS

In the event there are too many companies t[o] be supervised by one chief officer, the department should be divided into battalions or districts.

The American Insurance Association recommen[ds] that a department with 8 or more companies be divided into two districts or battalions.

Battalion 1 - 4 companies
Battalion 2 - 4 companies

Should either of the battalions or district[s] increase to 8 or more companies a third should be organized in the community.

Battalion 1 - 5 companies
Battalion 2 - 4 companies
Battalion 3 - 3 companies

So that the number of companies under any one chief officer could be handled effectively by him.

2. Fires Of A Complex Nature

Most fire fighting involves fires that are easily handled. Fires of a complex nature are few in number considering all fires in the same category.

Fires are generally considered complex because of:

- Their size
- The amount of property they involve
- The life hazard they create
- The amount of hazardous material involved regardless of size

The fire officer, usually proficient in handling a large number of fires, may lack experience in handling fires of a complex nature[.] We should supplement his experience with:

- Pre-fire planning
- Considering problems in advance

INSTRUCTORS NOTES | TEACHING POINTS

- Inspections dealing with storage of hazardous materials

- Life hazards

- Construction

- Conflagration hazards

- Publications dealing with fires of a complex nature

Fire problems of a complex nature should be carefully considered in advance and plans formed to aid the fire officer in his attack.

II. The Fire Fighting Functions Of The Company Officer

1. Receiving The Alarm

The fire fighting functions of any fir officer are performed first through a combinatio of several mediums of communication.

- Telephone

- Radio

- Fire Alarm System

Receiving the alarm starts the action to accomplish fire extinguishment.

Exact location is the most essential information.

What is burning will determine number of companies responding.

The officer determines whether his company will respond according to the pre-fire plans and running cards for his department.

- In small cities all major apparatus may respond

- Where there are five to seven companies, there are generally first and second alarm responses set up

- Large cities generally plan for fourth, fifth and sixth alarm assignments as well

INSTRUCTORS NOTES

TEACHING POINTS

The company officer must be familiar with running card assignments that affect his company. It is his responsibility to:

- Know when to respond according to running card assignment
- Secure proper location of fire from dispatcher
- Communicate information to apparatus driver before beginning response

2. Making The Response

The Company Officer should:

- Assign men to positions on apparat
- Insure that they are dressed and o the apparatus before the driver is permitted to move the vehicle
- Never disregard the safety of his men by trying to leave quarters to quickly
- Remind driver of:

  a. closed roads or streets
  b. road construction
  c. apparatus approaching on side streets

The company officer should exercis his authority to insure that the apparatus is kept under control, driven at a reasonable speed and arrives safely at the emergency.

3. Making The Size-Up

Sizing up is a mental evaluation o the situation that is made by a fire officer.

Generally the company officer is the first to reach the scene of the fire and is in command of operations until the arrival of a superior officer.

INSTRUCTORS NOTES

TEACHING POINTS

Knowing the location of the fire and the nature of the alarm gives the officer the first basic facts of the situation. In addition he must have a knowledge of:

- The building or buildings involved
- Nature of occupancy

Life hazards

- Exposures

He must then:

- Visualize the situation as a commandir officer and
- Insure his defense lay-outs coincide with departmental pre-fire plans

A company officer's size-up may involve:

- Only one piece of fire apparatus
- A second company arriving at the same time or
- Two companies operating independently according to a pre-fire plan

In either case an initial decision must be made according to a plan of operation.

4. ATTACKING THE FIRE

The company officer should lead and supervise his men, not perform their duties.

The first company officer to arrive should:

- Make the initial defense lay-out
- If conditions indicate a very small fire, investigate with another fire-fighter
- Order advancement of lines on fires that warrant immediate entrance

INSTRUCTORS NOTES	TEACHING POINTS

- Limit interior lines to 1½ inch hose except in large areas or where excessive heat requires larger cooling capacity

- Work at relatively close range with hand lines

- Provide larger lines and master stream devices when needed

- Lay adequate hose to back up first defense lines and for use in exposure protection

5. Supervising Overhaul

Overhaul is:

- The search for and extinguishment of hidden firese

- Placing the building, contents and fire area in a safe condition

- Determining the cause of fire

- Recognizing and preserving evidence of arson

Emphasis should be placed on the importance of searching for hidden fires to prevent rekindle.

The company fire officer should supervis his men during the removal of debris from a building and observe any suspicious evidence.

Making a building or area safe means the prevention of additional disastrous occurences.

The word "safe" applies to the protectio of personnel or public against:

- Rekindle

- Explosion

Falling walls

- Gases

Chemicals
- Open pits or voids

INSTRUCTORS NOTES

TEACHING POINTS

This is accomplished by many agencies in addition to the fire department, Department of Public Works, Gas and Water Utility, Electric Company.

6. Placing The Company Back In Service

Placing a company back in service is to an extent an aftermath of fire fighting functions.

It is the company officers responsibility to see that:

- All equipment used at fires is accounted for
- The apparatus and equipment is cleaned and serviced
- Any injuries to personnel or damage to equipment is reported

Refer to page 8 Lesson 3 - Maintenance

SUMMARY

In order to execute his duties properly, the company officer must make proper use of his

- Men
- Apparatus
- Equipment

The company officer's fire fighting functions in general consist of applying the techniques and methods of fire fighting that his company has been taught.

References - Suggested reading for Lesson 7

The Fire Department Officer - 2nd Edition - IFS

Published by - The Department of Fire Protection
Oklahoma State University
Stillwater, Oklahoma

WISCONSIN FIRE SERVICE TRAINING
LESSON PLANS

CODE-FO-8
TIME

COURSE: FIRE OFFICER

LESSON: FIRE FIGHTING FUNCTIONS

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL, BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

I. Fire Fighting Functions of the Chief Officer

The functions of a "Chief Officer" are as varied as the degrees of authority the rank commands in different departments.

A. Volunteer and Small Paid Departments; generally refers to the chief of the department or the assistant chief.

B. In larger departments the term may mean; Deputy, District or Battalion Chief.

The functions to be discussed are those of fire officers below the rank of chief of the department and above that of company officer. These same functions may also be performed by the Fire Chief in some departments.

II. The fire fighting functions of a chief officer are, to some extent, supervisory duties.

TO SUPERVISE MEANS MEANS TO WATCH OVER AND DIRECT AN ORGANIZED GROUP OF INDIVIDUALS.

A. For effective supervision; the followin items should be considered.

(1) The personnel of various fire companies in a fire department must be trained to properly perform thei function.

(2) The functions of all companies must be performed in accordance with the pre-fire plan of the department. Supervision cannot be effectively exercised if individual companies operate independently, or there is disorganized mass action. This

INSTRUCTORS NOTES

TEACHING POINTS

will permit the chief officer to:

a. plan
b. coordinate
c. direct the fire defense

(3) The chief officer should not attempt to supervise every detail nor observe every action.

(4) The effective supervisor must delegate authority.

III. During an emergency it is his responsibility to:

(1) Direct rescue operations

(2) Anticipate fire behavior and assign companies to control it.

(3) Establish adequate hose lines to supply both fire fighting force and private protection devices, sprinkler systems, standpipes, etc.

(4) Provide adequate ventilation and protection of exposures.

(5) Supervise salvage and arrange for refueling of apparatus.

(6) Concern himself with the health and welfare of the personnel in action, providing respiratory protection, relief during extremely difficult fire fighting operations, food and shelter where required.

After extinguishment:

(7) Determine which companies can be returned to service.

(8) Assign Companies to overhaul.

(9) Cooperate with the Fire Marshal's or other investigative agency in the determination of fire cause and the preservation of evidence of arson.

(10) Make sure the building is made safe

INSTRUCTORS NOTES

TEACHING POINTS

IV. Dividing Responsibilities

In the smaller departments all of the fire fighting functions may be the responsibility of the fire chief or there may be an assistant chief to whom he can delegate some of his duties.

In larger departments the responsibility for these functions will be delegated to district or battalion chiefs assigned to first alarm respons until they are relieved by a superior officer.

When two chiefs of equal rank are directing fire fighting operations, generally the chief in whose district the fire occurs will take overall command.

The chief officer in command at a fire shou divide the responsibilities among the other chie officers available at the scene.

(1) The chief officer in charge station himself in front of the fire buildi where he can observe the effectiven of operations, receive reports, and be reached by subordinates for orde

(2) A chief officer should be assigned to the OUTSIDE rear of the building to direct exposure protection and supervise company operations.

(3) Remaining chief officers could be assigned to the sides and interior of the building to insure that companies carry out the planned att and take care of special hazards.

When only two chief officers are present, the second in rank will usually supervise the interior operations while the chief in charge directs operations outside the building.

V. Making the Size-Up

When one or more companies arrive before th chief officer at a fire the company officer must make a size-up and place his company or companie into action according to the departmental pre-fire plans for the particular building or area.

INSTRUCTORS NOTES

TEACHING POINTS

(1) Generally based on apparatus and personnel immediately available.

(2) The chief officer should respect the decisions already made by the compar officers when forming his plan of attack.

The application of methods or pre-fire plans should be started before a chief officer arrives at a fire.

When ALL fire officers apply the same pre-fire plans at fires, these plans become facts about the situation and a chief officer can rely upon them.

A. Facts about the situation

Time incident occurs
Type of occupancy
Location and type of fire
Building, structure and contents
Life and exposure hazards - fire hazards
Weather conditions

B. Facilities

Personnel available
Apparatus
Special equipment
Water supply - source and utilization
Additional assistance (Reciprocal or mutual aid)
Master stream and private protection devices

C. Probabilities

Arrived at by the fire officer by considering the facts and estimating future happenings.

Will the lives of occupants, fire department personnel and spectators be endangered during operations.

Extension of fire to exposures
Possibility of explosion

Building collapse - consider these facts

INSTRUCTORS NOTES | TEACHING POINTS

Type of construction
The area involved - limited or extensive
Ability of contents to readily absorb water and create problems thru their expansion

D. Decision

Decisions must be made quickly based on the facts and probabilities of the situation.

The decisions made by the company office should be part of the chief officers pla

When directing additional companies in the fire attack, the chief officer shoul give the necessary orders and instructio to their officers.

The chief officer may also make supplem tal decsions as they are required to deal with new developments.

VI. Providing Exposure Protection

Normally company officers would provide initial exposure protection upon their arrival at a fire.

Chief officers take action to provide additional protection for control of:

A. External Hazards - buildings close enou to the fire structure to create a potential hazard of flame spread from one to the other.

B. Internal hazards - spread of fire in building.

This protection is often provided by use of:

(1) Building construction

a. adequate space between buildings
b. fire walls without openings
c. fire resistive walls with protected openings
d. roof parapets
e. solid division walls or with protected openings inside buildi

INSTRUCTORS NOTES

TEACHING POINTS

(2) Private fire protection

f. sprinkler systems
g. interior standpipes and hose lines
h. extinguishers
i. permantly installed deluge systems for exterior protection

(3) Fire fighting operations

j. lines to fire department connections to supply standpipe and sprinkler systems
k. hose lines and master stream devices; deluge sets, ladder pipes, etc.

Protection of exposures down wind of the fire is always more difficult due to the heat and smoke that is present. Because of the added difficulties special attention should be accorded these exposures.

VII. Directing Ventilation

As a company officer is usually leading his company during fire extinguishment he is not in a position to observe conditions on the outside and to evaluate the need for ventilation procedures.

The chief officer usually surveys the fire and orders ventilation procedures to be carried out. Ventilation is usually done by a ladder company but can also be performed by an engine or squad company.

Before the chief officer orders ventilation of a building he must make a series of decisions pertaining to the situation. He utilizes his initial size-up plus a supplemental size-up which will probably be made in the following manner.

Is there a need for ventilation at this time

Decision must be based on:

(1) Officers knowledge of situations that require ventilation

INSTRUCTORS NOTES

TEACHING POINTS

(2) The probabilities in his size-up

(3) Existing conditions

Where is ventilation needed?

(4) Based on officers previous experience, by his observation of:

a. smoke conditions
b. smoke color
c. heat conditions

What type of ventilation should be used?

(5) This decision will have to be made by the officer using his knowledge of:

d. top or vertical ventilation
e. cross or horizontal ventilation
f. forced (mechanical) ventilation
g. ventilation by the application of water

The officer MUST take certain precautions against

A. Increased burning
B. Spread of fire
C. Injury to personnel
D. Interruption of rescue procedures

before ordering ventilation procedures carried c

Some of the precautions that might be taken are:

A. Placing charged lines at all openings where the fire might spread.

B. Providing charged lines at all points where other buildings are exposed to the one involved.

C. Utilizing protective breathing apparatus in ALL situations where personnel are liable to encounter severe smoke conditions.

Orders to ventilate should be given in such a manner that the personnel assigned to the task know exactly where to ventilate and the method by which the process is to be accomplished.

INSTRUCTORS NOTES

TEACHING POINTS

VIII. Directing the Attack

The chief officers ability to direct an effectiv attack is based on:

A. How he adapts his previous experiences.
B. His application of his knowledge of the fundamentals of burning.
C. How well he recognizes the phases of fire development.

(1) Incipient or beginning phase
(2) Flame producing phase
(3) Smouldering phase
(4) Extension phase where the fire has extended beyond the confining walls of a room or building.

Using an interior attack on structural fires may be more difficult than fire fighting operations on the exterior of the building due to extreme heat and smoke conditions. The following are a few of the factors that warrant utilizing interi attack operations.

A. The time required to control and extinguish the fire.

B. The amount of increasing damage.

C. The hazard to human life.

D. The diminishing chance for heat control and fire extinguishment because of the increasing magnitude of the fire.

IX. Surveillance of Property

After the fire is under control the chief fire officer has the responsibility for:

A. Supervising overhaul

B. Protecting evidence of cause of fire

C. Making the building and area safe

Overhaul starts with locating hidden fires, extinguishing spot fires and preventing a rekindle.

INSTRUCTORS NOTES

TEACHING POINTS

The chief officer should keep close watch ov the property involved in a fire until it has bee made safe and the cause of the fire determined.

The releasing of the premises back to the property owner is usually in order upon completi of overhaul operations.

The property is released to the owner by a formal statement which relieves the chief office of his responsibility.

Ordinarily the release will only involve the property owner but in some cases other persons are involved.

Public relations play an important part wher making a release and the chief officer should:

A. Advise owner and occupants about conditions and recommend necessary precautior be taken.

B. Make tactful but firm recommendations for correction of deficiencies noted.

C. Give cooperation and make recommendatior to utility company personnel.

D. Cooperate with law enforcement representatives and other city officials.

X. Critque - Discussion

A critque or discussion should be held particularly after extinguishing large and extensiv fires. If conducted properly, it will bring out the good and bad points and will help all member to do a better job at the next fire. It also will usually disclose vital facts and serve two purposes.

A. Determine cause of fire - involves the thinking and opinions of a group of people.

B. Aid in the improvement of operations.

The use of a critque or discussion session is recommended after every important fire.

INSTRUCTORS NOTES

TEACHING POINTS

I. Fire Fighting Functions of the Fire Chief

A fire chief must perform all fire fighting functions if he does not delegate some responsibilities.

The fire chief who feels he must do all the work and "takes over" at all fires, stifles the desire of his chief officers to perform effectiv

The fire chief thru -

A. Selection

B. Training

C. Supervision

develops chief officers who have the ability to capably direct fire fighting operations and should permit them to use this ability.

This action by the fire chief instills a sen sense of accomplishment and job pride in the chief officer.

Another factor that may determine the fire fighting functions of the fire chief is the size of the department.

II. Fireground Cooperation With Other Agencies

There are other activities that a fire chief should perform which are not actually fire fighting functions, but they occur during fire fighting operations.

They include close cooperation with:

A. Police agencies to maintain public protection and clear areas for fire department operations.

B. Health services for the welfare of the people and firefighters.

C. Telephone company to maintain or rechannel communication circuits.

D. Water utilities to maintain or improve fire flow in affected area.

INSTRUCTORS NOTES

TEACHING POINTS

E. Gas and Electric companies to eliminate hazards to fire fighting operations with minimum disruption of service to the ar

F. Public welfare agencies to provide aid

G. News media - radio, TV, and newspapers provide information as it can be releas using an information center set up at o near command post.

H. Providing information and direction to "mutual aid" companies responding.

Some points that should be adhered to in mutual aid operations are:

1. The chief in whose protection area the incident occurs is in command o all operations.

2. Fire officers sent to render mutual aid by the authority of their fire chief, report to the chief in charg for orders and should at no time assume command.

If a fire chief tries to perform all the functi that are required of him instead of delegating duties to his subordinates, some of the functio will not be accomplished.

The effective fire chief should be able to say

"If my officers and men are trained to do their jobs, my whereabouts will have no effect upon extinguishment of fire."

THE BEST EXECUTIVE IS THE ONE WHO HAS SENSE ENOUGH TO PICK GOOD MEN TO DO WHAT HE WANTS DONE, AND SELF-RESTRAINT ENOUGH TO KEEP FROM MEDDLING WITH THEM WHILE THEY DO IT.

-------Theodore Roosevel

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-9

COURSE: FIRE OFFICER

LESSON: PRE-FIRE PLANNING

EQUIPMENT REQUIRED: NONE

TRAINING AIDS: EASEL, BLACKBOARD AND CHALK, OR TRANSPARENCIES

INSTRUCTORS NOTES	TEACHING POINTS

PRELIMINARY OPERATIONS

Planning is an essential item if we are to be able to look ahead and anticipate results in the business of fire protection.

When a particular task must be accomplished smooth performance of operations requires considerable advanced planning.

PLANNING is simply the process of taking time to analyze the problem of:

WHERE YOU ARE GOING

HOW YOU INTEND TO GET THERE

WHAT YOU INTEND TO ACCOMPLISH

During this process it may be difficult to determine what all the problems and requirements may be, but it is obvious that every effort must be made to determine these requirements BEFORE FIRES OCCUR, so that the best use can be made of available manpower and equipment.

I. Planning Objectives

Fire fighting must be planned before fire occurs if efficient results are to be obtained.

Since a plan must be devised prior to a fire, planning fire fighting is known as:

PRE-FIRE PLANNING

The methods of implementing pre-fire plans are as varied as the individuals devising them. However, the following essential objectives form a generally accepted concept of pre-fire planning.

INSTRUCTORS NOTES

TEACHING POINTS

While these objectives may not be listed in the order of their importance, they tend to specify and define planning in general.

A. Pre-fire planning is the preparation for positive and effective fire control operations.
B. Pre-fire planning is continous and flexible, not occasional and intermittent, or a "one time operation".
C. Pre-fire planning depends upon research, development, and experience, rather than perception and assumption.
D. Pre-fire planning is a specialized service which depends upon surveys, fact-finding, analysis, sequence and facilit:
E. Pre-fire planning is concerned with coordination of special activities.
F. Pre-fire planning is a result of collect activity to achieve objectives and solve problems that pertain to anticipated fi: conditions.

Lesson 1 of this course pointed out that the purpose of fire protection is accomplished by three phases of operations:

1. PREPARATION - the training of firefight to coordinate their abilities to success fully control fire.
2. ANTICIPATION - pre-fire planning around some uncertainies and some known facts.
3. ACTION - alerting firefighters to challenge of the situation.

Fire must be anticipated in order to plan for success, but such planning must include the possibility of adverse circumstances.

II. Promotion of Preplanning

Pre-planning has a very definite purpose:

TO INCREASE EFFICIENCY

The fire chief has the final word during all pre-fire planning, but he must realize that to be effective it requires the efforts of all experienced personnel in his department.

INSTRUCTORS NOTES

TEACHING POINTS

If the officers and men do not understand th purpose, benefits and results of pre-fire planning, they may think these plans are designed to:

SPECIFICALLY STATE EVERY MOVEMENT OF EVERY FIRE COMPANY THROUGHOUT A FIRE FIGHTING SITUATI OR DO ALL THE THINKING FOR FIRE OFFICERS.

This is not the intent of pre-fire planning, it is primarily used to:

Strategically position available fire apparatus

Provide adequate fire protection and life safety

Make the best use of all available facilitie and manpower

While this placement may be the initial tactical commitment of resources, it is not necessarily the final word concerning WHAT TO DO or WHEN AND WHERE TO DO IT.

All personnel should be given an opportunity to participate in the development of pre-fire plans, understand their operation, and promote them in their department.

When pre-fire plans have been developed for a hazard or area, and established as department policy, all personnel will have confidence in them because:

1. They have had a part in their developmen
2. They know that all other personnel are familiar with and operate using the same plan.

III. Where to Start

While pre-fire planning can be accomplished in any department, it must be remembered that someone must be designated to be responsible for the planning activities. It may be:

Fire Chief
Assistand Fire Chief
Head of Bureau or Division

INSTRUCTORS NOTES

TEACHING POINTS

The fire chief in organizing his pre-fire planning program should call a meeting of his officers to:

1. Outline what he proposes and how it is to be carried out.
2. Insure that all personnel involved are aware of the purpose, benefits and results of the planned program.
3. Make it clear that the person assigned the responsibility for the pre-planning program is not to do the planning himself, but:

   Act as liason between the chief his officers and men.

   Schedule inspections.

   Gather facts.

   Coordinate activities.

The person assigned the duties previously referred to, must remember that:

1. Every building within a city does not require a pre-fire plan.
2. Pre-fire plans are not developed overnight.
3. It may take several months to develop a plan and orient the officers and men before the plan can be established as company policy.
4. The type of planning desired.

   Area or target

IV. How to Start

The person responsible for pre-fire planning should meet with the officers of each district to determine which areas, buildings or plants require a pre-fire plan and which can be covered by the Standard Operating Procedures of the Department.

He should then arrange an interview with the administrative head of the property to:

INSTRUCTORS NOTES

TEACHING POINTS

Explains the purpose of the survey and what the department desires to accomplish by it.

a. Knowledge of the property that could affect the state, rate of spread and character of fire.
b. Making it possible for the department to do a better job of fire fighting should a fire occur.
c. The survey will be made in such a way as not to interfere with the plant or institutions normal operations.

The planning officer should make an overall initial survey before bringing individual fire companies into the program.

V. Collecting Information for Pre-Fire Plans

Pre-fire plans depend upon information that is obtained during surveys and inspections. This information concerns structural features and exposure problems.

The following list includes information that is essential in preparing pre-fire plans.

Location of stairways and elevators
Obstructions provided by partitions and merchandise
Features that limit proper ventilation
Location of quick-burning material
Potential danger of water absorbtion in stock
Location of skylights and other roof openings
Types of private protection devices
Location of utility shut-offs
Means to remove water from buildings
Accessibility of windows and their exposure
hazardous processes
Special evacuation features
Strength and fire resistance of floors stairs and ceilings
Extent and need for salvage work
Potential life hazard to occupants
Need for protective breathing equipment
Location and types of fire escapes
Location of overhead and outside obstructions
Location of mantraps
Location of toxic and radioactive materials
Location of sprinkler valves, sprinkler and standpipe connections
Location of fire doors, fire walls, curtain boards, and bulk heads
How entrance can be made into building

INSTRUCTORS NOTES | TEACHING POINTS

Exterior factors to be considered:

1. Distance to nearest hydrants or water supply - number of feet of hose necessary to reach each building in area - First and second lines.

2. Number of lines which can be supplied - gallons per minute available.

3. Size of mains - Hydrants - Flow pressure - Loop or dead end systems.

4. Exposures - Buildings on all sides of target building - How fire in target building would affect surrounding buildings - would it cause a conflagration?

5. Roads and means of access to buildings and areas - Streets, alleys, vacant lots, etc.

6. Where buildings may be laddered and what length ladders necessary for life saving or working lines.

7. Nearest fire alarm box or telephone.

8. Exterior sprinkler - Standpipe - Water curtain - controls or siamese.

VI. Making a Survey Map

A survey map is a drawing which is made during a fire company survey that depicts actual conditions as they exist. It is a record map and can be drawn by any capable person.

This map should show all items that pertain to the protection of life and property from fire including:

Water mains and supply
Hydrants
Private protection devices
Passageways

VII. Determining Hazards

INSTRUCTORS NOTES

TEACHING POINTS

If a fire attack on any one such hazardous situation is to be pre-planned, those doing the planning must first know the hazard in detail, and also know its relation to surrounding properties.

The nature of the property, both building and occupancy, will to a great extent determine the protection facilities required for that property and for the adjacent potential conflagration area.

Nature Of A Fire Hazard

A fire hazard is a condition that will encourage a fire to start or will increase the extent and severity of a fire.

This condition may concern the occupancy or a combination of the building and the occupancy. Thus a fire is started, and a conflagration hazard made possible, by existing building and occupancy conditions.

For the purpose of estimating possibilities and consequent attack requirements, fire hazards may be classified as:

Common - usually found in all occupancies and is incident to conditions of housekeeping, heating, light and power.

Special - arises from the processes or operations of an industry or business which may create hazards which favor the rapid spread of fire and possibility of explosions. (Also may require special methods of extinguishment.)

Miscellaneous - those common to many occupancies but not directly associated with processing activities.

Target - a building or installation in which a fire might involve a large loss of life, a large amount of rapidly burning material or materials of high monetary value.

In any area the focus of pre-fire planning attack is on the one or more target hazards which have the capability of becoming a nucleus of a conflagration with consideration being given to the possibility of extension of fire to the whole area.

INSTRUCTORS NOTES

TEACHING POINTS

VII. Occupancy

An occupancy includes everything within a building that is not part of the building itself. It may be materials and it may be people.

Recognizing and evaluating occupancy hazards is probably the most important factor in pre-planning fire attack.

If the hazards pertaining to occupancy are well understood:

The origin of fire

The travel and extent of fire

The intensity of a fire

may be reasonable well predicted, and plans made to control them.

Hazards of materials may be considered as either:

Causative - one that causes fire to start.

Contributive - affects extent of fire after it has started.

These two items must be given careful consideration in pre-fire planning as they have a direct bearing on the amount and type of fire protection that must be provided.

The causative hazard sigifying the origin of the fire and

The contributive hazard signifying the expected extent and intensity of the fire and the rapidity with which it may reach major proportions.

Fire Load

The intensity of fire that may be expected in any one occupancy depends upon the amount of fuel materials subjected to the fire, and the amount of oxygen available to the fire.

INSTRUCTORS NOTES

TEACHING POINTS

The physical arrangement of the fuel will have a direct bearing upon the heat released and the corresponding intensity of fire generated.

The amount of fuel material is referred to as the fire load and is computed as poinds per square foot of floor space.

The following estimates have been made of the fire load of different occupancies and are quoted from the NFPA Handbook of Fire Protection:

Type	lbs. per sq. ft. of floor are:
Residential	5 - 10
Schools	5 - 10
Institutional	5 - 10
Assembly	Under 10
Business, including mercantile	10 - 15
Industrial	About 30
Storage	About 40
Hazardous	About 40

These are estimates but may be used to compute the fire load of an occupancy. It should be remembered that to compute the total fire load, the combustible materials of the building should be added to the occupancy.

The fire load of an occupancy with its potential heat producing capacity is a factor to consider in pre-fire planning.

Consideration must also be given to the value of the material in an occupancy.

IX. Building Construction

Contributive fire hazards are of three types all so closely associated in any one building that they may be considered as a composite in the spread of fire. They are:

INSTRUCTORS NOTES

TEACHING POINTS

The design and material of the building itself

The material and physical arrangement of occupancy

The interior finishing

Buildings may be typed as follows:

Wood, wood frame, frame construction
Masonry wall and wood construction
Noncombustible construction
Fire-resistive construction

X. Accessibility and Entrance

The accessibility to a building or area refers to ways or means of approach.

Accessibility includes the route over which the apparatus travels responding to the fire.

AND

The immediate area including streets, roads, alleys, passageways and approaches to buildings.

The main points of entrance into a building are the doors and windows and their location should be studied.

When all personnel in the department make surveys and respond to the property they have previously visited, accessibility and entrance will be known to them.

XI. Life Hazard

Some of the items that should be noted during the survey and which affect life safety conditions are:

Condition of exits - clear of obstruction
panic hardware
direction of door swing

Availability of stairways, smoke towers or fire escapes.

Condition of building - danger of collapse if involved in fire.

INSTRUCTORS NOTES

TEACHING POINTS

Number of persons working or living in building in the day time.

Number of persons working or living in building during the night.

Crippled or bedridden persons on premises.

Places of assembly - number or persons building will hold - hours of occupancy

Positioning of apparatus so that best use may be made of ladders and other rescue equipment.

Posibility of the presence of toxic fumes as a result of rupture of equipment during a fire or other emergency.

XII. Vertical Openings

A knowledge of the vertical openings in a building is of utmost importance in pre-fire planning both from the standpoint of life safety and ventilation.

In making a pre-fire plan survey the following items should be noted:

Stairs - open or enclosed
with or with fire doors
door opens in or out
stairs turn left or right
are fire doors equipped to close automatically

Elevator shafts
Dumb Waiter shafts
Incinerator - trash chutes
- are they enclosed with fire resistive material and equipped with self closing metal clad doors
- condition of shaft - trash at bottom
- do tops of shafts open or stop in attic or do they extend thru roof

Vents and ducts - are they enclosed with fire resistive material and pass through upper floors, attic and roof

INSTRUCTORS NOTES

TEACHING POINTS

Location of: wellholes
belt shafts
escalators

Skylights - airshafts - elevator and other shafts - ducts - stairways - windows - etc. should be noted for speed and efficiency in ventilation.

When considering the ventilation potential of vertical openings, what properties around target building would be exposed under certain ventilating conditions.

XIII. Exposures

A fire exposure occurs when a fire in one building is likely to spread to another building.

Buildings containing highly combustible, highly flammable or highly dangerous materials or processes, present an exposure hazard.

In pre-planning protection of exposures there are numerous things to consider such as:

Nature and location

Distance from other buildings

Possible ignition of exposure by

a. conducted heat
b. radiated heat
c. convected heat
d. burning brands

Whether the exposure and the involved building have openings to each other

Are these openings protected by approved devices

The comparative heights of the involved and exposure buildings should also be considered

XIV. Available Water For Fire Fighting

Hydrant Locations

INSTRUCTORS NOTES

TEACHING POINTS

1. Within radius of 300, 500, 1,000 feet
2. Size of mains
3. Loop or dead end systems
4. Pressures and volume available (arrived at by flow test in hazard area)

The fire department should be provided a series of maps by the Water Utility showing the size and location of all mains in the system, hydrant locations and the location of all control or shut-off valves in the system.

5. All static sources of water, ponds, rivers, etc., storage tanks and any other water source other than the hydrant system should be part of the pre-planning to insure a supply should there be an interuption to the mains and also for use in rural fire fighting activities.

   a. distance from target or area hazard
   b. exact location
   c. most direct route

Maps should be prepared for these water supplies and included in the overall pre-fire planning.

XV. Private Fire Protection Facilities

Private fire protection devices are defined as those phases of building construction that are part of the structure which will inhibit the spread of fire.

1. Fire walls
2. Fire doors
3. Curtain boards
4. Standpipes
5. Sprinkler systems

and

6. Special extinguishing systems
7. Portable fire extinguishers
8. Hose houses

If a pre-fire plan is being developed for a building or series of buildings that are equipped with automatice sprinkler or standpipe systems it must include:

INSTRUCTORS NOTES | TEACHING POINTS

Companies assigned to reinforce or supplement the water supply to the sprinkler or standpipe system.

Assigning the fire department pumpers so that their operations will not rob a w water system of its supply for private fire protection devices.

XVI. Hazardous Areas Or Conditions

The pre-fire plan must consider areas in the plant or building that are susceptible to -

1. Fire
2. Explosion
3. Radiation
4. Toxic gases
5. Poison

as a result of material used in hazardous processes or stored there -

6. Flammable liquids
7. Explosives
8. Flammable solids
9. Oxidizing materials
10. Compressed gases
11. Radioactive materials
12. Acids

This knowledge is essential for the protection of personnel and fire fighting activities.

XVII. Standard Operation Procedures (SOP)

Standard Operation Procedures are those things that are commonly done as a measure of first defense against a fire in a particular area or building.

XVIII. Pre-Fire Plans For Areas

In planning the fire defense in a specific area consideration must be given to several determining factors.

1. Type of construction

   a. predominately combustible
   b. predominately fire-resistive

INSTRUCTORS NOTES

TEACHING POINTS

2. Type of area

c. single story residences wide spaced
d. tenement or high rise buildings
e. institutional
f. residential
g. business

3. Fire fighting facilities

h. fire apparatus
i. manpower
j. water supply and distribution
k. private fire protection devices

Some of the more important areas for which pre-fire planning is recommended are:

1. Institutional Areas - Hospitals
Asylums
Nursing Homes

2. Educational Areas - Universities
Colleges
Public and Private Schools

3. High Value Business Areas - Buildings of both moderate and extreme heights

4. Suburban Business Areas - Shopping Centers
Squares
Malls

5. Industrial Areas - Manufacturing Plants
Assembly Plants
Factories
Processing
Storage

6. Residence Areas - Large multi-storied dwellings
Apartment house areas
Closely built-up tenament areas

XIX. Pre-Fire Plans for Target Hazards

A target hazard is defined as a condition which could produce or stimulate a fire that would involve:

INSTRUCTORS NOTES | TEACHING POINTS

A possible large life loss.

A possible large property loss.

A large concentration of rapid burning materials.

A concentration of materials of high monetary value.

In making pre-fire plans for target hazards the following occupancies are most important and should be taken into consideration.

Assembly	High Hazard
Educational	Institutional

Some examples of target hazards not previously listed are:

Lumber Yards
Auditoriums
Coliseums
Warehouses
Bulk Oil Storage
Flammable Liquid Bulk Storage Plant
Dance Halls
Grain Elevators
Theaters
Churches
Hotels
Distilleries

Other target hazards may be listed according to local conditions.

XX. Determining Conflagration Areas

The term "conflagration" applies to sweeping fires that spread beyond control destroy cities or large areas of built-up property.

A number of hazardous occupancies or closely-built structures contribute to the probable spread of fire.

Conflagrations generally fall into one of the following catagories:

INSTRUCTORS NOTES

TEACHING POINTS

Fires starting in hazardous occupancies in congested sections which spread in one or more directions before effective resistance is organized to bring them under control.

Fires occurring in primarily residential districts and spreading beyond control because of closely-built combustible construction and wooden shingle roofs.

Extensive forest or brush fires that enter a city over a wide area.

Explosions that result in extensive fire spread over a wide area.

Conflagrations are seldom caused by any one factor alone, and the principal contributing factors have been determined, as accurately as possible, from the NFPA Fire Record File.

The factors that most often contribute to conflagration causes are:

Wooden Shingles

Winds in excess of 30 mph

Inadequate Water Distribution

Inadequate Public Fire Protection

Lack of Exposure Protection

The only sure method of determining a potential conflagration area is by thorough fire department surveys.

A survey is generally conducted by a fire department company and their work is usually referred to as fire company surveys.

The principle objective of a fire company survey is to gather facts for a pre-fire plan.

XXI. Planning An Attack

The attack should be planned after all factors have been considered and the expectant location should then be determined.

The size of the fire and its possible travel should also be anticipated and considered.

INSTRUCTORS NOTES | TEACHING POINTS

Mapping An Attack

The attack plan should be placed on a pre-fire plan map and it should show:

The position of the different fire companies.

The type of construction.

Special hazards.

The duties of the companies.

Streets and passageways.

Private Protection Devices.

XXII. Some of the other factors that should be considered in pre-fire planning are:

Case Histories

Case histories reviewed in pre-fire planning should include:

The experiences of any fire officer.

Similiar situations that may have occurred in other areas.

Reports of Fire Protection Organizations

Reports of experiments and tests that have been conducted.

The application of findings to the specific situation.

Running Card Assignments

A running card is a listing that shows fire company assignments to a given location for various alarms and are to a degree, pre-fire plans of a department the running cards do not provide sufficient manpower and apparatus to cope with a situation, the running cards must be revised to fit the needs of the plan.

INSTRUCTORS NOTES | TEACHING POINTS

Adverse Climatic Conditions

Climatic conditions that might be adverse to fire fighting procedures are:

High winds
Hot dry weather
Severly cold weather
Hurricanes
Tornados
Excess snowfall

Traffic Conditions

Traffic conditions may not only affect:

the response to a fire alarm but also the approach and accessibility of fire apparatus to the building involved.

or conditions when people or going to, or coming home from work and when there are more than the normal number of vehicles on the streets for any reason.

Physical Interference

Obstructions to alarm response that should be considered are:

Streams
Bridges
Railroads
Rough Terrain

and alternate routes must be provided in your pre-fire planning.

XXIII. Studying Pre-Fire Plans

When the pre-fire plan is completed copies should be distributed to all fire companies and studied by all personnel in Station Schools.

The training officer or chief officer should take the companies onto the area under discussion and position their apparatus according to plan unless it is specifically desired it is not necessary to actually lay hose lines.

INSTRUCTORS NOTES

TEACHING POINTS

The threads on all fire department connections to private protection devices should be checked with fire department couplings. The required layouts should be discussed at this time.

Any pre-fire plan must be flexible to the extent it can be applied to the situation at hand.

Study sessions should be conducted for the purpose of learning how to apply pre-fire plans and should emphasize the fact that on-the-spot modifications and adaptions are frequently necessary.

XXIV. Keeping Pre-Fire Plans Up to Date

It is essential that pre-fire plans be kept up to date and revised when necessary. Some of the basic reasons that warrant revision are:

New Construction and Expansion
Additional Fire Companies
Improvement of Water System
A fire has proved the plan can be improved
Change in occupancy (Hazardous)
Additional fire stations in district

A suggested procedure for revision is as follows:

A member of the department recommends that a change should be made.

A special meeting of the planning group is called to hear his report.

The reasons are considered and a recommendation is made to the chief.

The fire chief approves or disapproves the recommendation.

New pre-fire plans and supplements are made and distributed.

The fire companies are schooled concerning the change.

INSTRUCTORS NOTES

TEACHING POINTS

XXV. Cooperation and Coordination

If all officers and men of the department will COOPERATE it will result in:

A workable pre-fire plan of attack.

Familiarization of all personnel concerned with the plan.

Each company being trained to participate in the plan, alone and with other companies.

Assignment of definite operations to companies responding.

The delegation of responsibility to company officers responding.

The tactical deployment of all responding companies to meet the situation at hand.

A realization on the part of every officer and man in the department that the over-all success of the attack depends upon his performance, his cooperative efforts, and his COORDINATION with all operating groups that enter into the planned procedures.

REMEMBER: PEOPLE DO NOT PLAN TO FAIL:

THEY SIMPLY FAIL TO PLAN!

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-10
TIME

COURSE: FIRE OFFICER

LESSON: FIRE PROTECTION FACILITIES

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL, OR BLACKBOARD AND CHALK

INSTRUCTORS NOTES	TEACHING POINTS

Introduction

People who are actively engaged in fire protection work are unquestionably familiar with the tremendous fire loss in this country.

If one considers this loss to include only the damage incurred by fire, water and smoke, he is grossly underestimating the true losses.

The annual fire loss also includes:

The interruption of business

Unemployment

Disruption of production

Loss of irreplaceable materials and heirlooms

In addition many other articles are lost and their value cannot be measured in dollars.

I. The Responsibility For Fire Protection

While volunteer fire departments operating independently provide good fire protection for their community, fire protection is generally a responsibility of local government.

Community welfare depends upon protection against:

Fire

Crime

Disease

Most communities provide this protection by ordinance and by doing so make fire protection a governmental responsibility.

INSTRUCTORS NOTES	TEACHING POINTS

Public Fire Protection can be measured by the effectiveness of the services which are rendered by a fire department.

The citizens of a community have every right to expect good fire protection.

Civic duty has a responsibility in that the citizens must support and respect their fire department furnishing personnel and equipment to provide good fire protection.

Fire department personnel should be worthy of this respect and provide efficient service to the community.

Local government must provide a well-equipped, well-manned, well-trained fire department if the citizens are to be provided with good fire protection.

II. Resolving The Problem

The largest of problems can generally be more easily resolved when they are small. One of the most dangerous mistakes a fire officer can make is to ignore an existing problem, hopeful that it will go away.

To resolve a fire protection problem a fire officer must:

a. Deal with facts and situations as they exist.

b. Bring them out into the open

c. Analyze them for a possible solution.

It also requires that:

d. All concerned participate in solving the problems.

e. The facilities available to cope with the situation be utilized.

f. A plan of operations must be established.

g. A procedure by which individual fire protection problems can be handled must be developed.

INSTRUCTORS NOTES

TEACHING POINTS

III. Purpose And Scope

Fire protection, in a specific sense, refers to fire control and extinguishment, but the term is commonly used by agencies on a national, state, and local level to include fire prevention and other related fields.

On the local level there are:

Municipal fire departments

Rural fire departments

Private fire departments

Industrial fire departments

All of whom have specific responsibilities in the provision of fire protection.

These responsibilities are to prevent fire and to protect lives and property against fire and other disasters.

Agencies on the state level include:

Fire Prevention, Rating and Inspection Bureaus

Fire Service Training Organizations

State Fire Marshals

Whose main objectives are to:

Prevent loss of life and property by fire.

Provide and enforce laws.

Promote more adequate fire protection facilities.

The objectives of agencies on a national level are similar to those on a state level, except that their activities cover a much broader area.

Operation - Procedure

Because fire protection operations and fire fighting procedures are so closely related the following definitions are provided so that their meaning can be more easily understood.

INSTRUCTORS NOTES

TEACHING POINTS

Operation

The word "Operation" means the act of exerting power or influence to produce an effect. "Operation" denotes movement of functioning.

An operation is something to be done which requires the practical application of a principle or a process.

A FIRE PROTECTION OPERATION is a phase of the fire protection problem that needs to be coordinated with other phases of fire protection to achieve the objectives of the fire department.

Procedure

A procedure is a manner or method of performing an operation. It could also be described as a system of performing, operating, or conducting that which needs to be done.

Fire fighting procedures includes methods of preventing, attacking, controlling and extinguishing fires.

Since fire fighting procedures are methods by which operations are performed, fire protection facilities influence procedures.

The use of fire protection facilities, planning procedures, and understanding fire fighting operations will provide the means by which fire extinguishment and control can be logically and effectively accomplished.

IV. Physical Plant Facilities

The term "Physical Plant" is used to identify those real properties that are necessary for a complete fire department operation.

The physical plant includes:

1. Fire department buildings
2. Training facilities
3. Apparatus
4. Equipment
5. Facililities for:
   a. maintenance
   b. communications

INSTRUCTORS NOTES

TEACHING POINTS

Physical plant operations consist of coordinating properties with the functions which must be performed to fulfill the various operations.

Fire Stations

Fire department headquarters is generally considered the place where the administrative offices of the fire department are located. Although in some cases the office of the fire chief or fire marshal may be located in some other government office building.

Fire stations should be designed:

1. To be functional and meet the needs of the area to be served.

2. Should include building feature which will easily provide for expansion when required.

3. With the apparatus floor as the center of activity.

4. With a minimum of two days which should be adequate in length to house a ladder company.

5. With doors having a minimum clearance of 14 feet for apparatus. The number to be determined by amount of response and types of apparatus.

6. To include doors at the rear of the station whenever feasible to permit apparatus to be driven instead of backed into station.

7. To be built of fire resistive or protected noncombustible construction and should comply with all modern nationally recognized building codes.

8. With underground fuel storage and filling pump outside building.

9. With a glass enclosed room from which the apparatus floor and entrance to station can be observed and containing communication and alarm equipment, records, reports, etc.

INSTRUCTOR'S NOTES	TEACHING POINTS

10. To include dormitory and dining facilities to accomodate the maximum number of men who may be on duty at the same time.

11. With a hose tower or gas or electric dryer for hose and a warm dry room for the storage of protective clothing, salvage covers and reserve hose. This room should be equipped with a source of heated water and effective drainage system.

12. Locker and toilet space should be separated from the sleeping area.

13. With an effective heating, ventilating and/or air conditioning system.

14. With a library, classroom or recreation room that is well equipped for study, teaching or recreational activities.

Training Facilities

The success or failure of a fire depart- depends upon its training program, since no one other factor has as much effect on fire fighting procedures.

Some fire department operations occur so frequently that they can be standardized and the fire fighters, through training and repitition, become thoroughly skilled in their performance.

Other operations occur so seldom that a continuous training process is necessary to assure efficient operations.

All fire department personnel should realize that their efficiency in fire fighting operations is directly proportional to the effectiveness of their training program.

Training Grounds

The training area or gound should, whenever possible, be separated from a fire station and densely populated areas.

INSTRUCTORS NOTES

TEACHING POINTS

It should be:

1. A large area where fire fighting operations can be conducted without drainage, smoke or noise becoming offensive to neighbors.

2. Provided with a drainage system that will prevent sewer systems from being overtaxed and adjacent property flooded.

3. Provided with drill areas and roads surfaced with all-weather material which will not deteriorate with continuous use. The roads to be adequately interconnected for driver training, hose layouts and pump operator training.

4. Equipped with shallow concrete pits or other noncombustible containers, well situated, for flammable liquid fires and extinguishment practice.

5. Enclosed with a sturdy fence and well lighted.

Training Buildings

The importance of buildings and classrooms space for training purposes cannot be over stressed, since they provide situations which resemble actual fire conditions.

All offices, classrooms, library, storage and supplies should be located in the administration building.

One or more fire training buildings can be erected. These buildings are normally three stories or more in height.

These structures should incorporate the following features:

1. Rooms or areas specially designed for problems of

   a. heat
   b. smoke
   c. fire
   d. ventilation
   e. rescue

INSTRUCTOR'S NOTES | TEACHING POINTS

2. Devices which control the spread of fire

   f. variety of standard doors and windows
   g. fire walls
   h. vents
   i. fire doors
   j. movable partitions

Buildings used for burning purposes or smoke and heat control should be installed so that they can be expanded when the need arises or when the budget permits.

They should include:

1. A grid system of mains to adequately supply the entire training area.
2. At least 3 hydrants connected to the same main on the grid. These hydrants to be located by triangulation rather than a straight line segment of the main.
3. An underground draft basin with control valve supplied by the water system and arranged so that water from pump hose streams can be circulated back into the basin.
4. Automatic sprinkler, standpipe and alarm systems installed either in fire building or classrooms provided for this purpose.

Training Equipment

Training equipment includes tools, accessories, manuals, texts, visual aids and apparatus.

a. hand tools
b. appliances and adapters
c. breathing apparatus
d. hose
e. ladders
f. salvage covers
g. power tools

Manuals and Texts

Training manuals and texts for the fire service cover a broad field which includes:

h. fire codes
i. standards
j. drill manuals

INSTRUCTORS NOTES

TEACHING POINTS

k. related texts
l. reference bulletins
m. special topic publications
n. fire magazines

This material may be provided in a well-supervised library in the stations where they can be used by an individual.

In most instances, however, it is best for firefighters to be provided with their own individual manual or set of manuals.

Visual Aids

Visual training aids for the fire service include:

o. chalkboards
p. charts
q. graphs
r. blueprints
s. flannel boards
t. photographs
u. models
v. records
w. training outlines
x. projectors for slides, movie film and overhead transparencies

Visual aids are teaching tools to help a instructor teach more effectively.

They are not intended to take the place of an instructor but rather to supplement the teaching process.

Apparatus

Apparatus is seldom provided specifically for the training function. The pieces of equipment normally used for fire protection in the individual community should be available for use at the training center with their crews.

State Training Programs

Agencies that administer and supervise Fire Service Training on a state level provide a protection facility that can be a great asset to a fire department if their services are properly used.

INSTRUCTORS NOTES

TEACHING POINTS

State boards for vocational education often contribute financial aid and supervision for state fire service training programs.

Other sponsoring agencies often include:

1. State fire marshals bureaus
2. State inspection and rating bureaus
3. State firefighters associations
4. Universities and colleges
5. Other fire protection organizations

Fire department officials must realize that a state training program augumented by a local fire department instructor or training division, is the best means of providing training for their personnel.

Communications Facilities

A reliable center where emergency messages are to be received is important to any community.

Fire department communication facilities include:

1. All automatic signaling devices
2. Mechanical telegraph systems
3. Public telephone system
4. Departmental telephone system
5. Departmental radio system
6. Closed circuit television systems

A communications center must be designed for continued operations under the most critical conditions.

Therefore:

1. It should be located in a place free from:
   a. exposure fires
   b. falling walls
   c. flooding

2. If built as a wing of a fire station it must be separated by a substantial fire wall from the rest of the building.

3. In larger cities it is a better practice to locate the communication center in an open area without exposure problems. In a city park for example.

INSTRUCTORS NOTES

TEACHING POINTS

Buildings

1. The fire alarm buildings should be built of fire resistive materials.

2. Contents such as cabinets, closets, instrument cases and furniture should be noncombustible.

3. Exposed window openings should be protected by wire glass in approved metal frames, fire shutters or outside sprinklers

4. The roof should be reinforced to withstand falling walls when fire alarm building is built close to or adjacent to another building.

5. Light and power supply from either two separate utility distribution systems or one from a utility distribution system and a second from a storage battery system or generator.

6. Consideration should be given to providing fire protection to the center by installing an automatic extinguishing system.

Some of the factors that should be considered when choosing a site for a fire alarm building are as follows:

1. The location of the present fire alarm cable center.
2. The direction and character of growth of the community.
3. The relation to conflagration area.

Equipment

Communication equipment must provide a means of reporting fires to a fire department and an effective system of rapid communication between the operating units of a department.

1. Two and three-way radios installed on fire fighting units and fire officer's cars.
2. Public fire alarm system
   a. street boxes, circuits and devices intended primarily for receipt of alarm

INSTRUCTORS NOTES

TEACHING POINTS

This type of system also provides facilities for notifying and dispatching fire companies to fires and includes provisions for receiving fire alarms from persons using commercial telephones and for alerting others such as, police and water departments.

Municipal fire alarm systems are usually referred to as Type A and Type B.

Type A Systems

Alarms received from street boxes require alarm operator to check their receipt and to retransmit all alarms to fire stations or sounding devices.

The Type A system is satisfactory for any size community and is especially desirable when the number of emergency calls approaches 1,500 per year.

Type B System

It is not necessary for the alarm operator to check the receipt and transmission of alarm as the equipment in the alarm office automatically retransmits a fire alarm to the various fire stations or soumding devices.

A fire alarm system in any community is definitely a part of the physical plant. The use of commercial exchange telephones in fire alarm transmission has limitations as to a means of giving reliable and prompt fire alarm service.

Commercial exchange telephones and the fire alarm systems function on two different principles.

Commercial exchange telephones operate on "open" circuits through which current flows only when contacts are made in the system.

Any failure of the circuit, such as a broken wire, gives no warning until an attempt is made to use the system.

Telephone and telegraph fire alarm systems operate on "closed" circuits which are electrically supervised.

INSTRUCTORS NOTES

TEACHING POINTS

A small amount of current is always flowing through the closed circuit and should the circut become inoperative a warning signal is immediately given.

Most telegraph alarm systems are also designed to transmit signals by means of ground connections even though there may be trouble existing at any point.

It is recognized that the most satisfactory means of sending and receiving fire alarms is through the facilities of a well-maintained telegraph, telephone, or radio fire alarm system.

Refer to Standard No. 73, "Municipal Fire Alarm Systems", published by the National Fire Protection Association. These standards are adopted by the American Insurance Association and are used by the various state rating organizations when grading cities for fire insurance purposes.

Fire Apparatus

The performance and service required of motor driven fire apparatus differ considerably from those required of commercial trucks.

Care must be taken to select chassis and motors that are suitable and adequate for fire service. Road performance vehicle design and weight distribution are just as important as pumping performance.

Fire Department officials must be careful to demand that fire apparatus purchased be tested for road performance as well as pumping performance.

Refer to Standard No. 19, "Automotive Fire Apparatus", published by the National Fire Protection Association, when selecting automotive fire apparatus.

Distribution of Fire Companies

Studies of response distances have been conducted in all principal sections of the country. Additional field checks on the data obtained from these surveys have subsequently been made in other municipalities.

INSTRUCTORS NOTES

TEACHING POINTS

Response distances for fire companies are based on:

1. Type of district and fire flow required
2. Overall improvement in fire apparatus, streets and other factors influencing response.

The standard response distance for first-due fire companies to a high-value district which requires a fire flow less than 4,500 gpm is:

1 1/2 miles for engine (pumper) companies
2 miles for ladder (aerial) companies

Where the required fire flow is 4,500 to 9,000 gpm

1 mile for engine (pumper) companies
1 1/4 miles for ladder (aerial) companies

Where the required fire flow exceeds 9,000 gpm

3/4 mile for engine (pumper) companies
1 mile for ladder (aerial) companies

The standard response distance for first-due companies in residential districts is:

2 miles for engine (pumper) companies
3 miles for ladder (aerial) companies

When residential districts are sparsely built with an average separation of 100 feet or more, the

Standard response is:

4 miles for engine (pumper) companies
4 miles for ladder (aerial) companies

For closely built residential districts which require more than 2,000 gpm fire flow or where tenement or apartment buildings are more stories in height the standard distance is:

1 1/2 miles for engine (pumper) companies
2 miles for ladder (aerial) companies

INSTRUCTORS NOTES

TEACHING POINTS

All the foregoing standard response distances shall be reduced if narrow or poor conditions of streets, traffic, topography, or other unusual local conditions hinder a response. Other circumstances peculiar to a particular situation may also indicate that such a reduction is needed.

The standard for concentration of fire companies for multiple alarms in high value districts requiring 12,000 gpm fire flow is:

15 engine (pumper) companies
7 ladder (aerial) companies

within 5 miles of the district.

Considering the same district and required fire flow the concentration of fire companies for first alarm response is:

3 engine (pumper) companies within 1/2 miles
2 ladder (aerial) companies within 2 miles

Engine and ladder company concentration will be correspondingly less for districts requiring smaller fire flows.

Maintenance of Facilities

Maintenance of facilities involves those physical properties that are necessary for efficient operation.

Facilities maintenance is generally divided into:

1. Buildings
2. Equipment
3. Apparatus

Records should be maintained of:

4. Repair
5. Cost
6. Operating condition

Adequate reports should be furnished to the fire chief and all other departments concerned in every community.

Buildings

Building maintenance is subdivided into:

INSTRUCTORS NOTES

TEACHING POINTS

1. Housekeeping
2. Repair

Housekeeping to be performed by station personnel and repair and alterations by either the city maintenance division or private contractors.

Equipment

The term fire equipment, as used here, includes all fire fighting facilities other than buildings and fire apparatus.

Equipment for maintenance purposes should be divided into two catagories:

1. Manually operated
   a. ground ladders
   b. hose
   c. nozzles
   d. hand tools, etc.

2. Mechanically operated

   e. certain fixed installations
   f. visual aids
   g. fire protection training devices
   h. power tools and accessories
   i. heating and air-conditioning
   j. protective breathing equipment
   k. generators
   l. inhalator-resucitators

All of this equipment requires a well-supervised maintenance schedule, whether daily, weekly or monthly.

It is the responsibility of the fire officer to insure this maintenance is carried out and to maintain records and adequate reports of its performance.

Refer to pages 39-42 IFSTA Manual "The Fire Department Officer" for maintenance check lists.

V. Private Protection Facilities

Private fire protection includes those components of building construction that inhibit the spread of fire and those devices that are installed within or about a structure to detect fire or restrict its spread.

INSTRUCTORS NOTES

TEACHING POINTS

Some large industrial plants maintain fully paid fire departments with equipment and personnel comparable to municipal fire departments.

Other plants have a volunteer or partly paid fire brigade which is made up of men who are regularly employed in the plant.

NO PROPERTY is too small to need some form of private fire protection.

Most private protection devices are, to some extent, applicable to either interior or exterior usage, but certain general types lend themselves to an interior area of usage.

These are:

1. Automatic sprinkler systems
2. Standpipe systems
3. Special extinguishing systems

Automatic Sprinkler Systems

Automatic sprinkler fire protection is a device for automatically distributing water upon a fire is sufficient quantities to either extinguish the fire or hold it in check until other fire fighting operations can be started.

When properly designed, installed and maintained

They:

1. Eliminate human mistakes and delays in attacking a blaze
2. Operate as needed in the immediate vicinity of the fire
3. Promptly deliver a quantity of water spray where it is most effective.

Type:

4. Wet System
5. Dry System
6. Deluge System

Fire department connections are provided outside structures containing these systems to permit pumpers to supply them and this greatly increases the efficiency of an operating system.

INSTRUCTORS NOTES | TEACHING POINTS

It is essential that fire officers know how these systems are supplied so that other engines are not hooked up in such a manner as to rob the sprinkler system of its water.

Curtain Boards

Curtain boards or fire curtains are sometimes constructed in buildings with large sprinklered areas.

They are built tightly against the roof ceilin and extend downward a MINIMUM of 24 inches.

They may be required to subdivide the roof or ceiling area or for separation of sprinkler systems.

They are intended to bank the heat in the area where the fire started, to more quickly accelerate the operation of heat detectors and sprinkler heads, and thus reduce the number of operating sprinkler heads.

Standpipe Systems

A standpipe system is a means of providing fire streams to upper floors in buildings and supplying such streams in a short time.

Standpipes are large vertical pipes or risers supplying water to various locations on each floor. Standpipe stations may be equipped with hose lines for use by occupants or have fire department connections for use by fire fighters.

Fire department connections should be supplied outside the buildings so that a pumper may supply the system. These connections should be marked "STANDPIPE" to distiguish them from sprinkler connections which should be marked "Auto-Sprinkler".

There are different types of standpipes.

1. Wet standpipe system having water pressure maintained at all times.
2. Dry standpipe system so arranged through the use of proper devices as to admit water to the system automatically when a hose valve is opened.

INSTRUCTORS NOTES

TEACHING POINTS

3. Dry standpipe system arranged to admit water to the system through manual operation of approved remote control devices located at each station.
4. Dry standpipe system having no permanent water supply but provisions are provided for fire department connection at the ground level.

Special Extinguishing Systems

Special extinguishing systems constitute the arrangement of devices to extinguish or control fire where it might occur in easily ignitable, fast burning substances.

Such as:

1. Flammable liquids
2. Some gases
3. Special chemicals

These special extinguishing systems are also used to protect ordinary combustibles where they create a hazard in high-hazard occupancies and occupancies especially susceptible to damage.

Some examples are:

4. Dip tanks
5. Drainboards
6. Flow coaters
7. Electronic laboratories
8. Storage tanks
9. Fur vaults
10. Chemical processing

Special extinguishing systems include automatically or manually operated control devices on:

1. Chemical or mechanical foam extinguishing installations.
2. Carbon dioxide systems.
3. Water spray systems.
4. Dry chemical systems.

Each of the chemical systems can be arranged as:

INSTRUCTORS NOTES | TEACHING POINTS

5. Total flooding.
6. Extended discharge.
7. Local application.
8. Hand hose line.
9. Standpipe.
10. Mobile supply system.

REMEMBER special extinguishing systems are generally intended to supplement automatic sprinkler systems rather than to serve as a su-stitute for them.

Exterior Protection Facilities

Special protection other than that supplied by hose streams, is frequently needed to prevent damage from fire in adjoining or adjacent property.

Exterior protection is generally specifically at:

1. Windows.
2. Doors.
3. Other openings in exterior walls.
4. At points where heat transfer is most likely to cause fire spread.

The exterior protection needed depends on:

1. The possible severity of the fire in the adjoining property.
2. The horizontal distance between the two structures.
3. The vertical position of the specific item to be protected in relation to the adjoining property.

Exterior protection is generally known as exposure protection or protection from an exposure fire.

Fire Walls

Fire walls are barriers between buildings or large areas and they are designed to limit the spread of fire or the protect against exposure fires.

Their effectiveness depends on their:

1. Construction
2. Tightness

INSTRUCTORS NOTES

TEACHING POINTS

3. Stability
4. Strength
5. Insulating qualities
6. Fire resistance rating

They should have:

7. As few openings as possible
8. All openings protected by approved automatic fire doors

They should:

9. Be continous through all stories
10. Be ground supported wherever possible
11. Extend through the roof with height of parapet determined by type of roof construction and surrounding area
12. Have vertical fire cutoffs with fire resistive enclosures and fire doors used at stairways, elevator shafts and other openings within the area to prevent fire spread between the floors.

Exterior Openings

Exterior openings in the wall weaken it as a fire barrier and their number and size should be kept to a minimum.

Some of the methods used to protect these openings are:

1. Window sprinklers with open heads usually operated by opening a manual control although they can be installed with deluge valves and thermostat which will operate them automatically.
2. Blank masonry or concrete walls
3. Wired glass windows with outside sprinklers
4. Plainglass windows with outside sprinklers
5. Wired glass windows with outside sprinklers protection. Glass block panels shatter under severe fire exposure. Have about the same resistance as wired glass.

Portable Fire Extinguishers

Portable fire extinguishers are probably the most common of all private protection equipment.

INSTRUCTORS NOTES | TEACHING POINTS

They are portable because of their small weight and bulk although wheeled portable extinguishers are also available.

Portable extinguishers should:

1. Be relied upon only to the extent of their intended use.
2. When that limit has been reached, large fire fighting equipment should be used.
3. Be used by persons trained in effectively operating them.

Fire Detection Systems

Although fire detection devices and alarm systems are not fire extinguishing equipment, these installations are considered private fire protection, since they often activate an alarm before someone discovers the fire.

Fire detection and alarm systems should:

1. Be types listed by the Underwriter's Laboratories Inc. (UL) or Factory Mutuals (FM) to insure their reliability and suitability for intended use.
2. Be installed and maintained by persons specializing in this work.
3. Not be used for any other purpose than transmitting fire alarms.

Types of Systems

Central Station Systems

1. Maintained and operated by private concerns that have no other interest in the protected premises.
2. On-duty personnel receive and transmit alarms as required under the rules established for their guidance.
3. Provides indepent and outside check on property protected.
4. Regular test of equipment and circuits made and generally their is constant electrical supervision.

Proprietary System

Supervised by experienced and competent personnel in a central station located at the property protected.

INSTRUCTORS NOTES	TEACHING POINTS
	Includes equipment and facilities required to permit operators to maintain, test, and operate the system. Local System Sound an alarm at one or more points on the premises. Signals may be indicated on an annunciator or a recording tape, but they usually activate a bell, siren or horn. Auxiliary Systems Fire detection systems connected directly to the public fire alarm system and the alarm transmitted to the fire alarm office over the municipal system. Remote Station Systems This alarm has a direct circuit connection between the actuating devices at the protected premises and the signal equipment at a remote fire or police station. Periodic inspection and testing is required to insure its efficiency and reliability.

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-11

COURSE: FIRE OFFICER

LESSON: FIRE FIGHTING PROCEDURES

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL, BLACKBOARD AND CHALK, TRANSPARENCIES

INSTRUCTORS NOTES	TEACHING POINTS

Relationship Of Procedures To Operations

A procedure is a course of action or a system of performing, operating or conducting a series of actions.

Fire fighting procedures are performances that affect other functions of a fire department. They should be performed systematically, and they should consist of operations which are done in a sequence to accomplish a desired result.

To further emphasize the meaning of fire fighting procedures, the terms "job" and "operation" should be considered.

A "job" is a task that needs to be done. Jobs are usually performed by one or more workers who follow a step-by-step pattern.

When a series of jobs are combined in logical order for a planned purpose, their function is known as an "operation".

This course of action that is chosen to perform an operation is a procedure.

Relation Of Procedures to Pre-Fire Plans

Pre-fire plans are starting or vantage points from which additional fire fighting procedures can be directed.

Pre-fire plans do not replace decision making nor are they, by themselves, a complete fire fighting procedure.

A pre-fire plan will start fire companies into action and they may even position them and stipulate certain procedures, but their actions are the responsibility of a fire officer.

INSTRUCTORS NOTES

TEACHING POINTS

Relation of Procedures to Training

Fire fighting procedures are directly related to training, since firefighters train to perform jobs, combine jobs into operations, and apply operations to execute pre-fire plans.

The course of action that a fire officer chooses for a fire fighting procedure will be based upon his training, his experience, the facilities available and pre-fire plans for the location.

Relation of Procedures to Fire Company Operations

A technique or method is a way of doing something which can be depended upon to get desired results.

Fire fighting procedures employ operations that are based on definite techniques.

Fire companies may be trained in the techniques of doing jobs, but when they respond to fires they have definite operations to perform.

ALL FIRE COMPANIES

Receive the alarm
Making the response
Determine point of operation

PUMPER COMPANIES

Make layouts
Advance hose lines
Protect exposures
Perform forcible entry
Attack the fire
Confine the fire
Extinguish the fire
Perform rescue
Perform overhaul
Aid in other operations

LADDER COMPANIES

Raise ladders
Operate aerial
Perform rescue
Perform forcible entry
Perform Ventilation
Perform salvage
Perform overhaul
Aid in other operations

SPECIAL COMPANIES

Perform rescue
Perform forcible entry
Perform ventilation
Perform salvage
Perfrom overhaul
Aid in other operations

INSTRUCTORS NOTES:

TEACHING POINTS

Dispatch And Response Of Fire Companies

The factors which usually regulate and control the dispatching and positioning of fire companies are "Running Cards" and "Pre-Fire Plans".

Running cards tell which fire companies respond to a fire and pre-fire plans guide and direct these fire companies to their points of attack.

Small cities may dispatch all major fire apparatus on a fire alarm leaving only reserve units in quarters.

Larger cities usually plan their running card assignments for as many as five or more alarm responses.

Anticipating A Situation

Anticipation is a process of forming a mental image of a condition that is not, at that moment present before the eyes.

It must be accomplished by the fire officer after receipt of an alarm and during his response to the situation.

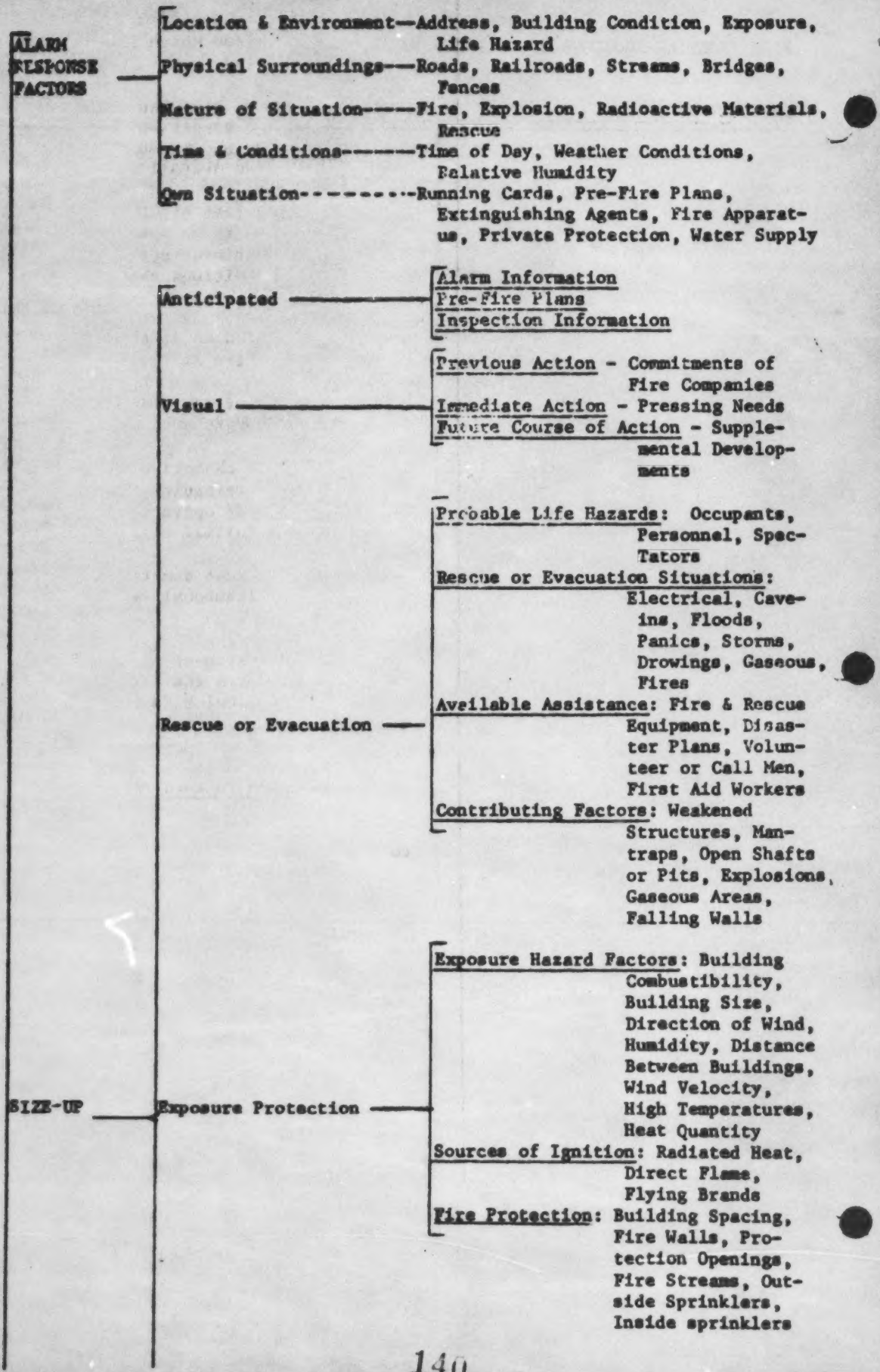
When a fire officer has previously observed a condition and later finds it is necessary to visualize this situation under fire conditions, he must recall previous views of the location and anticipate possibilities.

Anticipating a situation must be based upon facts and existing conditions such as:

Location and Environment : Address
Building Condition
Type of Occupancy
Exposures
Life Hazard

Physical Surroundings : Roads
Railroads
Streams
Bridges
Fences

INSTRUCTORS NOTES	TEACHING POINTS	
	Nature of Situation: (Type and what is involved)	Fire Explosion Radioactive Materials Rescue
	Time and Condition:	Time of Day Weather Conditions Relative Humidity
	Own Situation:	Amount and Type of Apparatus Dispatched (Running Cards) Review Pre-Fire Plans for Occupancy or Area Extinguishing Agents Available Types of Apparatus Available (Multiple Alarm or Mutual Aid Response) Private Fire Protection Water Supply


ALARM RESPONSE FACTORS
Location & Environment—Address, Building Condition, Exposure, Life Hazard
Physical Surroundings—Roads, Railroads, Streams, Bridges, Fences
Nature of Situation—Fire, Explosion, Radioactive Materials, Rescue
Time & Conditions—Time of Day, Weather Conditions, Relative Humidity
Own Situation—Running Cards, Pre-Fire Plans, Extinguishing Agents, Fire Apparatus, Private Protection, Water Supply
SIZE-UP
Anticipated
Alarm Information
Pre-Fire Plans
Inspection Information
Visual
Previous Action - Commitments of Fire Companies
Immediate Action - Pressing Needs
Future Course of Action - Supplemental Developments
Rescue or Evacuation
Probable Life Hazards: Occupants, Personnel, Spectators
Rescue or Evacuation Situations: Electrical, Cave-ins, Floods, Panics, Storms, Drowings, Gaseous, Fires
Available Assistance: Fire & Rescue Equipment, Disaster Plans, Volunteer or Call Men, First Aid Workers
Contributing Factors: Weakened Structures, Man-traps, Open Shafts or Pits, Explosions, Gaseous Areas, Falling Walls
Exposure Protection
Exposure Hazard Factors: Building Combustibility, Building Size, Direction of Wind, Humidity, Distance Between Buildings, Wind Velocity, High Temperatures, Heat Quantity
Sources of Ignition: Radiated Heat, Direct Flame, Flying Brands
Fire Protection: Building Spacing, Fire Walls, Protection Openings, Fire Streams, Outside Sprinklers, Inside sprinklers

INSTRUCTORS NOTES

TEACHING POINTS

Size-Up

A size-up is an estimation or an evaluation of a condition from which an opinion or judgement can be formed.

With facts at his disposal and a previous observation of a condition, a fire officer initiates action and he must now look at existing conditions for an overall size-up.

Sizing up a fire or other situation is more than just a step in an operation because size-up must be a continous action throughout the everchanging conditions that exist.

Fire Officers must realize that size-up has not been completed until a situation is under control or the fire is extinguished

The purpose of any size-up is to determine what is necessary to cope with a situation.

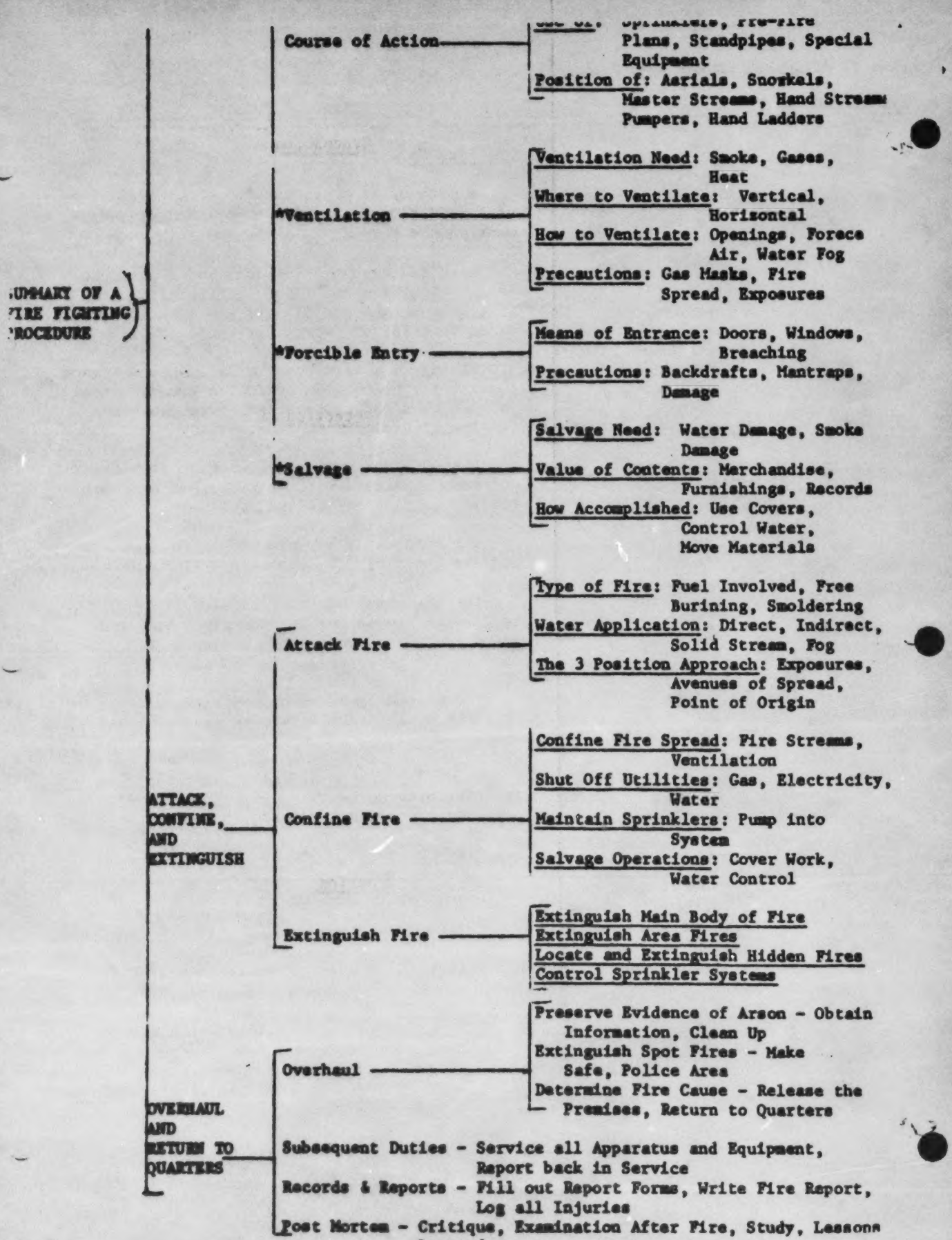
The ultimate objective in fire fighting is to confine and extinguish the fire, but there are vital needs or operations that must be carried out to fulfill this objective.

These needs must sometimes be considered and determined simultaneously with extinguishing operations.

In making a size-up and determining fire fighting procedures the fire officer should consider the following factors:

Size-Up

Anticipation Factors	Alarm Information Pre-Fire Plans Inspection Information
Visual	Previous Action - Commitments of fire Companies Immediate Action - Pressing Needs - Future Action - Supplemental Developments


SUMMARY OF A FIRE FIGHTING PROCEDURE
Course of Action
Plans, Standpipes, Special Equipment
Position of: Aerials, Snorkels, Master Streams, Hand Streams, Pumpers, Hand Ladders
*Ventilation
Ventilation Need: Smoke, Gases, Heat
Where to Ventilate: Vertical, Horizontal
How to Ventilate: Openings, Forced Air, Water Fog
Precautions: Gas Masks, Fire Spread, Exposures
*Forcible Entry
Means of Entrance: Doors, Windows, Breaching
Precautions: Backdrafts, Mantraps, Damage
*Salvage
Salvage Need: Water Damage, Smoke Damage
Value of Contents: Merchandise, Furnishings, Records
How Accomplished: Use Covers, Control Water, Move Materials
ATTACK, CONFINE, AND EXTINGUISH
Attack Fire
Type of Fire: Fuel Involved, Free Burning, Smoldering
Water Application: Direct, Indirect, Solid Stream, Fog
The 3 Position Approach: Exposures, Avenues of Spread, Point of Origin
Confine Fire
Confine Fire Spread: Fire Streams, Ventilation
Shut Off Utilities: Gas, Electricity, Water
Maintain Sprinklers: Pump into System
Salvage Operations: Cover Work, Water Control
Extinguish Fire
Extinguish Main Body of Fire
Extinguish Area Fires
Locate and Extinguish Hidden Fires
Control Sprinkler Systems
OVERHAUL AND RETURN TO QUARTERS
Overhaul
Preserve Evidence of Arson - Obtain Information, Clean Up
Extinguish Spot Fires - Make Safe, Police Area
Determine Fire Cause - Release the Premises, Return to Quarters
Subsequent Duties - Service all Apparatus and Equipment, Report back in Service
Records & Reports - Fill out Report Forms, Write Fire Report, Log all Injuries
Post Mortem - Critique, Examination After Fire, Study, Lessons

INSTRUCTORS NOTES	TEACHING POINTS
	Rescue or Evacuation — Probable Life Hazard - Occupant; Personnel - Spectators Rescue or Evacuation Situations Electrical; Gaseous; Cave-ins; Fires; Floods; Panics; Storms; Drownings
	Rescue or Evacuation — Available Assistance Fire and Rescue Equip.; Additional Manpower; Disaster Plan; First Aid Workers Contributing Factors Weakened Structures; Mantraps; Open shafts or pits; Gaseous Areas; Explosions; Falling Walls
	Exposure Protection — Hazard Factors Building Combustibility; Building Size & Height; Direction of Wind; Humidity; Distance Between Buildings; High Temperatures; Wind Velocity; Heat Quantity Sources of Ignition Radiate Heat; Direct Flame; Flying Brands Fire Protection Building Spacing; Protected Openings; Outside Sprinklers; Fire Walls; Fire Streams; Inside Sprinklers
	Course of Action — Use of Sprinklers; Pre-Fire Plans; Standpipes; Special Equipment

INSTRUCTORS NOTES	TEACHING POINTS	
		Position of Aerials Snorkels Master Streams Hand Streams Pumpers Ground Ladders
	*VENTILATION	Ventilation Need Smoke Gases Heat Where to Ventilate Horizontal Vertical How to Ventilate Openings Forced Air Water Fog Precautions Breathing Apparatus Fire Spread Exposures
	*Forcible Entry	Means of Entrance Doors Windows Breaching
	*Salvage	Salvage Need Water Damage Smoke Damage Value of Contents Merchandise, Furnishing Records How Accomplished Use Covers Control Water Move Materials

*Operation items that may be performed anytime that a need is present during a fire fighting procedure.

Attack, Confine And Extinguish Fire	Attack Fire - Type of Fire Fuel Involved Free Burning Smouldering

INSTRUCTORS NOTES	TEACHING POINTS
	Water Application Direct Indirect Solid Stream Fog The 3 Position Approach Exposures Avenue of Spread Point of Origin Confine Fire Confine Fire Spread Fire Streams Ventilation Shut off Utilities Gas Electricity Water Maintain Sprinklers Pump Into System Salvage Operations Cover Work Water Control Extinguish Fire Extinguish Main Body of Fire Extinguish Area Fires Locate & Extinguish Hidden Fires Control Sprinkler Systems
Overhaul and Return to Quarters	Overhaul Preserve Evidence of Arson Extinguish Spot Fires Determine Fire Cause Obtain Information Make Area Safe Release the Premises Clean Up Police Area Return to Quarters Subsequent Duties Service all Apparatus and Equipment Report back in Service

INSTRUCTORS NOTES

TEACHING POINTS

Records and Reports
Fill Out Report Forms
Write Fire Report
Log All Injuries

Post Mortem
Critique
Examination After Fire
Study
Lessons Learned

The Need For Rescue or Evacuation

A fire officer is responsible for life protection and he must provide rescue and evacuation for the occupants of a burning building or those who are endangered by other situations.

A properly conducted fire inspection survey does not, in itself, provide rescue and evacuation for occupants but it will reveal the nature of occupancy of every building and the probable need for life protection.

A life hazard can usually be expected in the following occupancies:

Apartments	Dormitories
Auditoriums	Hospitals
Churches	Hotels and Motels
Coliseums	Industrial Plants
Convalescent Homes	Nurseries
Day Schools	Nursing Homes
Office Buildings	Childrens Homes
Penal Institutions	Rooming Houses
Schools	Theaters

When a fire officer considers the need for rescue and evacuation he should also consider the physical and mental condition of the occupants.

Physical Conditions	Mental Condition
Awake	Mentally ill
Asleep	Panic-stricken
Injured	Frightened
Bedfast	Composed
Immobilized	

These factors, plus locations where victims may be trapped, to some degree, regulate the type and priority of rescue that might be needed.

INSTRUCTORS NOTES

TEACHING POINTS

To perform a rescue means to take a person out, to free or liberate him from confinement or danger.

Fire service rescue denotes individual or groups liberation that cannot otherwise be accomplished by an individual.

It includes operation such as using:

Ladders	Carries
Elevating Platforms	Drags
Rope Work	Stretcher Work
Life Net	Life Line

Evacuation is the process of emptying or providing a way by which a group of people can be guided to exits and withdrawn from an area.

Evacuation includes the use of such facilities as:

Exits	Corridors
Passageways	Stairways
Fire Escapes	Escalators
Elevators	

In addition to providing rescue or evacuation for occupants, a fire officer must:

Prevent unauthorized persons from entering burning buildings.

Prevent injury to spectators and personnel.

Possess a knowledge of structural conditions, fire spread, contents and fire resistive ratings of materials that may affect the point of entry and area of operation of fire companies.

Be alert to condition that may cause him to change his operations to provide for the life safety of his personnel.

<u>The Need For Exposure Protection</u>

An exposure during fire fighting, is the possibility of one structure or its contents becoming ignited from a fire in an adjoining building or other exterior source.

INSTRUCTORS NOTES

TEACHING POINTS

"Exposure Hazard" identifies a building not involved in fire but which constitutes a hazard because of its:

Condition
Position in relation to the fire building
Contents

A building may also be adjacent to the fire building, yet not create an exposure hazard because of its:

Fire resistive characteristics
Unpierced fire walls

The extent of an exposure hazard depends upon:

The size and combustibility of the exposure
The distance between buildings
Weather Conditions
The ease with which the exposed building ignite

Some of the factors that affect exposures to a varying degree during fire fighting operations are:

Ignition by: radiant heat
direct flame contact
burning brands

High temperatures and large quantities of heat
Direction and velocity of wind
Relative humidity of atmosphere

Protection against exposure fires may be accomplished by one or more of the following provisions:

Open space between buildings, clear of combustibles.
Parapeted fire walls without openings.
Fire resistive walls with protected opening
Noncombustible roofs.
Fire Department hose streams.
Outside automatic sprinklers.
Inside automatic sprinklers.

INSTRUCTORS NOTES

TEACHING POINTS

It should be remembered that exposure conditions vary so greatly that it is generally not practical to establish set rules that apply in all conditions or situations.

Sprinklers and Standpipes

Sprinklers and standpipes are fire protection devices, but their mere existence does not assure fire extinguishment.

Sprinklers and standpipes can be very useful tools for fire extinguishment if they are used by a fire officer as a functional part of his plan.

Using these devices to the best advantage REQUIRES the hooking up of hose lines from pumpers to supply and/or supplement the systems.

Special Equipment

Most fire apparatus is equipped with some special device or equipment that may be used for special occasions or conditions.

The fire officer must know:

What special equipment is in use in his department
Its availability, on apparatus, special called, etc.
How to utilize it effectively.

Position of Pumpers

Establishing a basic location of pumpers on a first alarm response was discussed in Lesson 9, Pre-Fire Planning.

If necessary a fire officer must be prepared to relocate pumpers at a fire due to:

Blocked hydrants
Closed streets
Disrupted water supply
Fire spread

Position of Fire Streams

The position of fire streams at fires probably has more influence upon the fulfillment of a course of action than any other fire fighting facility.

INSTRUCTORS NOTES

TEACHING POINTS

Determining the need for fire streams in different areas can be achieved by observing:

the point of intense heat
avenues of fire spread
places that need protection

Points of intense heat or rapid generation of heat usually require a multiple action of several medium sized streams with a fog pattern, while other cases of rapid combustion may require large hand streams with fog patterns.

Avenues of fire spread may require a solid stream application to reach the burning material and fog streams to supplement their application.

Other areas, such as exposures, openings, passageways, or large enclosed spaces, may require master streams or water curtains either from ground level, roofs of other buildings or from aerial and platform apparatus.

The type of stream required may be determined to a reasonable degree of accuracy, by considering the following list of needs.

These needs are also indicative of places to position fire streams.

The need for wide coverage.
The need for stream reach.
The need for stream mobility.
The need for rapid heat absorbtion.
The need for water volume.
The need for water curtain.

<u>Position of Aerials, Elevating Platforms and Ladders</u>

Determining a location that positions aerials and elevating platforms so that they can operate to their best advantage involves a consideration of the functions that these devices perform and the immediate need for these functions.

For example these devices may be needed in a certain area to provide a means of performing a rescue for one or more persons.

INSTRUCTORS NOTES | TEACHING POINTS

Later, these devices may need to be moved to another location to direct elevated streams or to provide access to the roof of a building for ventilation operation.

The position of ground ladders also depends on their immediate need.

Since the primary purpose of ground ladders is to provide access to upper floors for fire fighting operations, their placement is generally determined by the fire officer supervising a particular operation.

The Need for Ventilation

Ventilation is an associated operation of fire fighting and its importance is magnified because its use usually affects the overall results of fire extinguishment.

This importance places ventilation in the category of a major factor in a course of action.

When a fire in a confined space has developed to a point of flame production, the following conditions may be anticipated.

Excessive heat accumulation from the upper levels downward.

Smoke conditions in the atmosphere of sufficient density to obstruct adequate visibility.

Oxygen content of less than the normal percentage of oxygen.

Toxic and irritating properties in the atmosphere.

The problem of excessive heat is one factor that creates these abnormal conditions.

Excessive heat is responsible for:

The origin

The extension

And continuation of the fire

including the difficulty in reaching it.

INSTRUCTORS NOTES

TEACHING POINTS

Smoke and the contamination of the atmosphere is an aftermath of flame production and excessive heat.

Before fire fighting personnel can enter and operate within an area of this nature, it is essential that they take the necessary action to:

Eliminate or reduce the probabilities of a "backdraft"

Increase the degree of visibility so that the personnel can operate within a building.

Reduce the temperature to permit operations within a building.

Provide an atmosphere that contains a normal percentage of oxygen.

Remove or reduce the toxic and irritating properties in the atmosphere to permit interior operations.

Before a fire officer orders or directs a ventilation operation, he should first make a series of decisions pertaining to ventilation needs.

Is there a need for ventilation at this time?

His decision must be based upon the heat, smoke and gas conditions within the structure.

Where is ventilation needed?

Several factors enter into making this decision such as:

Construction features of building
Exposures
Wind directions
Extent of fire
Location of fire,
Top of vertical openings
Cross or horizontal openings

What type of ventilation should be used?

This determination will be made based of the fire officers knowledge of the following methods of ventilation.

INSTRUCTORS NOTES

TEACHING POINTS

Providing air passages between interior and exterior atmospheres.

Using the application of water fog and the expansion of water into steam to displace contaminated atmospheres.

Using mechanical ventilation.

When determining the need for ventilation the fire officer MUST consider the precautions to be taken to insure the safety of his man and control of the fire.

BE SURE POINTS OF ATTACK HAVE BEEN CHOSEN AND CHARGED HOSE LINES ARE IN PLACE BEFORE BEGINNING VENTILATION OPERATIONS.

The use of self-contained breathing appartus should be mandatory.

The Need For Forcible Entry

Forcible entry is another of those associated operations that is performed when the need is present.

Deciding the need for forcible entry is usually the responsibility of a company officer or the person who is confronted with its need.

All fire fighters should be thoroughly trained in forcible entry practices.

Forcible entry is usually required in places where:

normal openings are locked
normal openings are blocked
normal openings are not provided

The supervising officer should take every precaution against:

Backdrafts
Mantraps
Unescessary damage to property

The Need for Salvage

Salvage operations are associated with fire fighting because its purpose is to protect a building and its contents from damage that may be caused by water or other elements.

INSTRUCTORS NOTES

TEACHING POINTS

Although buildings and their contents are sometimes subject to water damage from leaks, sprinklers or floods, the general application of salvage refers to water damage during fire fighting.

Some of the factors a fire officer must consider in salvage operations coordinated with fire fighting activities are:

Location of fire and area involved.
Nature and value of contents.
Automatic Sprinkler Systems.
Personnel and Salvage Equipment Available.

"Runoff" water is one of the biggest problems in salvage operations, Its immediate removal reduces damage considerably. Some of the methods it can be controlled are by:

The use of floor drains, scuppers, dikes, stairways, elevator shafts, and salvage cover chutes.

Other methods of protecting merchandise, other stock and furnishings are by covering them with salvage covers, moving material and storing on built-up skids.

Attack, Confine, Extinguish

The word "Attack", as it is used in fire fighting, means, "to begin work upon a task, problem or object of labor".

To attack a fire is the beginning of fire fighting action.

Operations such as planning, visualizing, size-up, and layouts are preparation for attack, but an attack does not start until the first company comes in contact with the task, problem or object.

The following factors are discussed according to the way in which they influence operations and become part of a fire attack.

Type of Fire	Avenues of Fire Spread
Water Application	Point of Origin
Exposures	Confinement
	Extinguishment

INSTRUCTORS NOTES	TEACHING POINTS
	Type of Fire
	A knowledge of the type of fire is most essential to a fire officer when he determines his fire attack because this factor deals with the fuel that is involved and whether a fire is free burning or smouldering.
	The Incipient Stage, oxygen is available and the fire is producing water vapor, carbon dioxide and possibly a small amount of sulphur dioxide. There is some carbon monoxide being
Slightly over 100 Degrees F.	generated. Some heat is being generated and its intensity will increase with the progress of the fire.
	The Free Burning Phase, oxygen in the room or area has been reduced, but enough remains to support a free-burning fire.
	All combustible materials in the upper levels of the room or area will have been heated to their burning temperatures because of the rapid generation of heat, and they may be burning violently. This heated condition of the atmosphere causes rapid expansion of the gas and smoke-laden air, which will force their exit at every crack and crevice available.
About 1,300 degrees F.	The free burning phase is a period of rapid burning and entrance may be impossible because of the intense heat and rapidly increasing amounts of smoke and fire gases.
	The Smouldering Phase, fire is barely visible because the reduction of oxygen has increased the amount of carbon monoxide, free carbon and unburned fuel gases.
	The fire will smoulder and the room completely fill with dense smoke and gases of combustion at a temperature of well over 1,000 degrees
Over 1,000 Degrees F.	Fahrenheit. THE HUMAN BODY COULD NOT SURVIVE IN SUCH AN ATMOSHPERE.
	The intense heat will have vaporized the lighter fuel fractions, such as hydrogen and methane, from the combustible material in the room, and these fuel gases will be added to those produced by the fire and will further increase the hazard.

INSTRUCTORS NOTES

TEACHING POINTS

Creating conditions that could lead to:

BACK DRAFTS - SMOKE EXPLOSIONS

The incipient phase, free burning phase, and smouldering phase separate the development of an interior or confined fire.

A condition that is not applicable to a confined fire is where a fire has extended beyond the confining walls of a room or building.

The phase in which a fire is found should have considerable bearing on the type of attack and the positions for attack.

As the burning process continues, the chances for heat control and fire extinguishment become less because of the magnitude of the fire and the quantity of heat that is produced.

Whenever fire streams of adequate volume and form are employed at advantageous points of attack and heat is absorbed faster than it is being generated you are conducting an offensive attack.

Water Application

Another vital factor is the method by which water is applied.

It involves direct water application to the burning material and indirect water application into the super-heated overhead space.

The method of water application includes the use of solid or fog fire streams, or a combination of the two, to provide water in a form that is most suitable for the type of attack that is required.

THE EXTINGUISHING PROPERTY OF WATER IS BASED UPON THE AMOUNT OF HEAT IT WILL ABSORB.

This absorption depends upon the transfer of heat from the burning material to the water that is applied.

INSTRUCTORS NOTES

TEACHING POINTS

One common mistake a fire officer is likely to make is providing too few fire streams when they are needed.

A FIRE OFFICER SHOULD NOT HESITATE TO LAY ADEQUATE HOSE LINES TO BACK UP A FIRE ATTACK EVEN THOUGH THEY MAY NOT BE NEEDED AT THAT PARTICULAR TIME.

Fire extinguishment involves not only the choice of fire streams, rate of application and distribution, but it also involves selecting points from which streams may be operated.

Exposures

The need for exposure protection was discussed earlier in this lesson but the way in which exposures became a part of a fire attack will be considered here.

The three positions of approach to fire fighting were then established to be:

(a) at exposures
(b) at avenues of fire spread
(c) at points of origin

These locations are positions from which a fire attack must be launched and from which fire control and extinguishment are accomplished.

Exposures, then, become a position from which fire attack is made.

When a small building, such as an ordinary residence, is involved, an exposure attack may be made with fog streams from small hose lines.

Larger buildings may an exposure attack with large hand lines, master stream appliances, or water curtains.

When fire has penetrated an exposed building, an attack must be carried out into the interior in addition to an attack upon the opening through which the fire extended.

All roofs, windows, and doors that are located on the exposed side of a building should be protected with adequate fire streams during an exposure attack.

INSTRUCTORS NOTES	TEACHING POINTS

Avenues of Fire Spread

Fire can and does spread throughout a burning building by one or more of the following methods:

Conduction associated with heat transfer without flame.

Heat is transferred from one body to another by direct contact thru an intervening heat-conducting medium.

The amount of heat that will be transferred and its rate of travel depends upon the material through which the heat is passing.

The spread of fire throughout a building by conduction should not be ignored, although this method of fire spread is not significant to an initial attack.

Radiation, the process of fire spread in the transfer of heat from one body to another by heat rays through space.

Radiated heat is not absorbed by the air to a great extent and heat will travel through space until it meets an opaque object.

An object that is exposed to heat radiation absorbs heat and, in return, will radiate heat from its surface.

Radiated heat is one of the major sources of fire spread and its importance demands an immediate attack at points where radiation is severe.

Convection, is the transfer of heat by air currents.

The spread of fire by convection has more influence upon the positions for fire attack then either conduction or radiation.

Since heated air expands and rises, fire spread by convection is generally upwards although air currents can carry heat in any direction.

INSTRUCTORS NOTES	TEACHING POINTS

In many instances convected heat currents spread fire:

A. from floor to floor
B. from room to room
C. from area to area
D. through corridors
E. up stairwells, dumbwaiter and air shafts, elevator shafts
F. between walls
G. through attics, cock lofts and crawl spaces

Flame Contact

Fire also spreads along and through a flammable material by direct flame contact

Fire progresses throughout a building by a horizontal, vertical and downward extension process.

Horizontal Extension

Through wall openings by direct flame contact or by convected air currents.

Through open space by radiate heat or by convected air currents

Through corridors, halls, or passageways by convection air currents, radiation and flame contact

In all directions by explosion of flash burning of fire gases, flammable vapors or dust

Through walls and interior partitions by direct flame contact

Through walls by conduction of heat through beams, pipes, or other objects that extend through walls

Vertical Extension

Through stairwells, elevators, and shafts by direct flame contact or by convected air currents

INSTRUCTORS NOTES

TEACHING POINTS

Through partitions and walls and upward between the walls by flame contact and convected air currents

Through windows or other outside openings where flame extends to other exterior openings and enters upper floors

Through celings and floors by conduction of heat through beams, pipes, or other objects that extend from floor to floor

Through ceilings and floors by direct flame contact

Through floor and ceiling opening where sparks and burning material fall through to lower floors

By collapse of floors and roofs

From the standpoint of fire attack, such places as;

attics
false ceilings
cocklofts
spaces between floor and ceiling
spaces between walls
corridors
vertical openings
horizontal openings

are all vulnerable to fire spread. These areas and places should be seriously considered when a position for fire attack is selected.

Point of Origin

The point of origin of a fire is sometimes quite visible and easily defined. It often may be completely concealed and difficult to determine.

Generally it is located at the point where the most intense burning is present, unless the fire has extended to more highly flammable materials or an explosion has caused a rapid extension of the fire.

INSTRUCTORS NOTES

TEACHING POINTS

Locating the intense burning and/or point of origin will enable a effective attack to be made at that point.

Enclosed fires sometimes present a situation where the point of origin can be attacked before a fire has had a chance to extend to other areas.

In instances like this, an attack at avenuesof fire spread and at exposures may not be necessary, BUT PREPARATION FOR AN ATTACK AT THESE TWO POINTS SHOULD ALWAYS BE MADE.

In some instances fire spread so rapidly that it is ESSENTIAL to make an attack at the avenues of spread and exposures before the point of origin or intense burning.

They are:

Heat Concentration which generally can be detected by;

1. Observing the intensity of radiated heat
2. Felling walls, doors, windows and other objects
3. Observing cracked glass
4. Discolored materials and expanded metal
5. Audible sounds characteristic with the fires progress

Color and Behavior of Smoke

The intensity, denseness and color of smoke will quite likely indicate the proximity of a fire especially if the smoke is escaping in puffs through small openings.

Flame Intensity can only be used to locate the point of origin when flame is visible.

Flame may be visible with little intensity because it may be traveling along an avenue of flame spread and this location may not be the point of origin or intense burning.

INSTRUCTORS NOTES

TEACHING POINTS

Confinement

Confinement of fire includes those operations which are required to prevent fire from extending to uninvolved areas.

Total confinement means that a fire is under control and that it is being extinguished.

Consideration must be given by the fire officer of other facilities related to the confinement of the fire such as:

Public Utilities - Gas and Electric Service, Water Utilities

Private Protection Devices - Standpipes, Sprinkler Systems

Fire Department must reduce the life hazard or damage to property by shutting off the utility services in the fire building

and

insure adequate and uninterrupted water supply and proper supervision of valves of private protection device.

Extinguishment

Fire extinguishment is the act of supressing flame with an extinguishing agent which includes those operations required to stop burning.

The type and kind of extinguishing agent that should be used must be determined by the fire officer and his judgement should be invluenced by the nature of the physical state of the fuel that is burning.

A fire officer must know which extinguishing agent is best suited for the various types of fuels and he should be well-informed concerning all types of extinguishing agents.

The volume and rate of application of an extinguishing agent will be determined by the quality of the fuel that is burning and the intensity of the heat that is being generated.

INSTRUCTORS NOTES

TEACHING POINTS

The method that should be used to apply an extinguishing agent depends upon the physical arrangement of the fuel and existing form of the extinguishing agent.

Post Fire Operations

Overhaul

While firefighters perform overhaul operations under the direction of their company officers, the chief officer is responsible for the plan of overhaul operations.

A proper plan of overhaul will:

Help to locate hidden fires

Help to prevent rekindle

Help determine cause of fire

Aid in recognizing and preserving evidence of arson

Assist in preventing unecessary damage

Permit removal of original fire cause

Aid in placing the building in a safe condition

Improve public relations

A good plan of overhaul should include the following operations although their sequence may be changed to meet existing conditions.

1. Recognize and Protect Evidence of Arson
   a. Identify, preserve, rmove and safeguard evidence

2. Search for hidden fires.
   a. In concealed spaces
   b. Under debris and around merchandise

3. Extinguishment of hidden fires.

4. Removal of Debris from buildings

INSTRUCTORS NOTES

TEACHING POINTS

5. Making the building safe.
   a. Guarding holes or other openings
   b. Covering roofs, windows and doors

6. Placing contents in proper order
   a. Including safeguarding of valuables

7. Making the area safe

8. Restoring private protection equipment
   a. Sprinkler Systems
   b. Standpipe Systems

9. Releasing the premises

Arson Detection

The basic definition of arson is;

The malicious burning of a dwelling that belongs to another person. The definition of this crime has been widened to include the similar burning of other property and the burning of one's own property.

The duties of any fire chief, pertaining to arson, are regulated by state fire laws through the state fire marshal or the state crime bureau.

A fire officer has certain specific duties to perform with respect to arson fires.

He is generally required to immediately report all fires of suspicious nature to enable the proper authority to make a prompt investigation.

The following items are suggested for the fire officer's use at fires.

I. Observing general conditions at the scene of the fire.

   A. Approaching the fire:
      1. Observe the weather
      2. Observe persons and automibles
      3. Observe color of smoke and flame
      4. Observe size of fire and speed at which it is traveling

INSTRUCTORS NOTES	TEACHING POINTS

B. Upon arrival; Note:
1. Odors
2. Number of separate fires, their intensity, rate of spread
3. Methods required to extinguish the flames

II. Observe conditions at time of fire
A. Condition of building.
1. Were doors and windows locked
2. What was condition of doors, windows and locks
B. Condition of owners, occupants and bystanders.
1. Dress and manners of persons at fires
2. Look for familiar faces
C. Condition of contents.
1. Are there indications of removal of personal articles
2. Is there an indication of the removal of valuable or large quantities of merchandise.

III. Locating evidence of fire causes
A. Look for indications of arson intent.
1. Multiple fires
2. Odors
3. Undue wood charring
4. Uneven wood burning
5. Holes made in walls and floors
6. Inoperative sprinklers and fire doors
7. Tracks, footprints, and fingerprints
8. Condition of heating equipment
9. Containers used for flammable liquids
10. Residues of wax or paraffin
11. Debris and salvage
B. Look for arson materials and equipment.
1. Trailers between fires
2. Candles
3. Matches
4. Chemicals
5. Flammable liquids
6. Rags, waste and paper
7. Gas stoves
8. Glass
9. Bottles
10. Unusual gagets and timing devices
11. Electrical equipment

INSTRUCTORS NOTES

TEACHING POINTS

There are two things that should be kept clearly in mind by ALL fire department personnel regarding the protection and preservation of material evidence.

1. Keep the evidence where it is found, untouched and undisturbed, IF AT ALL POSSIBLE.

2. When evidence, which cannot be left at the scene of the fire, is decovered, PROPERLY IDENTIFY, REMOVE AND SAFEGUARD IT.

Determining the Cause of a Fire

When the cause of a fire is being determined, both the fuel involved and the heat source that caused ignition must be considered. Fire do not start without cause, and the cause is always present.

Fire department personnel should judge fuel hazards and heat hazards by their characteristics.

Remember, a fire is caused only when fuel and heat come together and both the fuel and heat that started the fire should be entered into the records as the fire cause.

The following indications serve as clues which will lead to the cause of most fires.

I. The Cause of the Fire
   A. Occupant's opinion of how fire started
   B. Occupant's description of all materials at the point of origin
   C. Information from firefighters, citizens, neighbors
   D. Personal study of fuel and heat sources at point of origin

II. Look for physical indications of the following

Explosion

Explosions usually involve combustible gases, flammable liquid vapors or explosives.

INSTRUCTORS NOTES

TEACHING POINTS

Flash Fire
Evidence of scorched materials over a wide area and not deeply charred. Flash fires usually involve flammable vapors, gases or flimsy solids.

Extremely Hot Fires
Evidence of deep char, spalled materials, and melted materials. This type of fire usually involves fuels of high B.T.U. content, such as oils, greases, chemicals, rubber, and combustible metals.

Electrical Fires
This type fire involves fires in electrical appliances, such as overheated irons, motors, wiring, T.V. sets and radios.

Heating Appliance Fires
Heating appliances has reference to furnaces, stoves, wall heaters, space heaters, and cook stoves

Incendiary Fire
This type includes all fires that are not accidental in nature

Some Easily Ignited Fuels
Lightweight combustible materials
Thin plywood or veneer
Shingles
Loose cotton or other fibers
Loose paper or cloth
Rubbish and trash

Some Easily Ignited Fuels
Combustible dust
Flammable liquids

Materials Susceptible to Spontaneous Heating
Vegtable oils
Animal oils
Finely divided metals
Hay and grain

Explosive Materials - Hazardous Metals
Magnesium
Sodium
Potassium
Reactive Metals

INSTRUCTORS NOTES

TEACHING POINTS

Heat Sources
Open flame
Matches
Welding and blow torches
Gas jets
Lamps and lanterns

Hot Surfaces
Stoves
Vent pipes
Steam pipes
Hot metal

Mechanical Sparks
Grinding wheels

Friction
Hot bearings
Shredding
Cutting
Rubbing belts
Polishing
Drilling

Electricity
Arcs and Sparks
Light bulbs
Heating coils
lightning and static

Chemical Reactions - Rays of the Sun - Compression of gases

CHECK FOR UNUSUAL CONDITIONS WHERE THE HEAT SOURCE MAY BE CONVEYED TO THE FUEL SOURCE.

Subsequent Duties

The release of companies at a fire is usually the responsibility of the officer in charge of the incident.

When necessary one or more standby lines will be maintained during overhaul operations and uneeded apparatus returned to quarters.

Fire apparatus that has been used at fires must be serviced and be made ready for another response. This is a subsequent duty of the company officer.

INSTRUCTORS NOTES

TEACHING POINTS

Other subsequent duties of fire officers include:

Releasing the premises

The following is a list of persons or agencies who may be involved and the fire department's responsibility to them.

I. The owner and occupants
   A. Advise about conditions
   B. Recommend necessary precautions

II. Utilities
   A. Give full cooperation
   B. Recommend necessary precautions

III. Other authorities
   A. Cooperate with law enforcement representatives
   B. Cooperate with city officials
   C. Notify proper authorities of suspicious fires

Obtaining Data, Filling out Report Forms and Writing the:

Fire Reports

An official written fire report is a story of conditions as they were found, an account of the actions that were taken, a summary of conclusions, and a listing of recommendations.

Official reports on fires will be of little value if they are not used. They are a source of information and assistance to many departments and agencies such as:

Fire Department	Insurance Investigators
State Fire Marshal	Insurance Adjusters
Law Enforcement	

IV. Occupancy and Contents

   A. Name of occupant and principal use of building

INSTRUCTORS NOTES

TEACHING POINTS

B. Description and use of important areas
C. Contents of principal areas
D. Fire load because of contents
E. Value concentration of contents

V. Story of The Fire
A. Date and circumstances of discovery of fire
B. How, when and by whom was alarm transmitted
C. Fire department personnel and equipment that responded to fire
D. Observations of firefighters at time of arrival at fire
E. Location of hydrants and apparatus used
F. Where each company worked and equipment it manned
G. Description of spread or extinguishment of fire
H. Outside aid called and response
I. Equipment needed and not available
J. Interesting or unusual happenings
K. Injuries or deaths
L. Fuel and ignition source that caused fire
M. Length of time fire was fought
N. Total of hose and ladders used
O. Number of gallons of water used to fight fire

VI. Factors Invluencing The Spread of Fire
A. Factors favorable to spread fire
B. Factors limiting the spread of fire
C. Factors favorable to fire fighting

VII. Structural Behavior
A. Estimate of temperature in building
B. Evidence supporting temperature estimate
C. Damage to structural parts from fire, heat or water
D. Types of construction or structural parts that withstood the fire with little or no damage

VIII. Conslusions and Recommendations
A. Lessons learned from this fire
1. Evidence of poor construction
2. Fire fighting activities that might have produced better results

INSTRUCTORS NOTES

TEACHING POINTS

B. Recommendations to prevent recurrence of similar fires

IX. Illustrations
A. Photographs
B. Block map showing fire fighting layouts

Post Mortem - Critique

A post mortem or critique means an examination after the fire is extinguished.

For a critique to be effective the persons participating must possess some of the following traits:

They must have some knowledge of conditions.

They must be sincere and honest

They must be fair, but firm.

The must take the opportunity to listen.

They must have courage to act upon what they hear.

They must accept challenge with initiative.

They must believe that human relations is, in reality, treating people more like humans and less like relations.

WISCONSIN FIRE SERVICE TRAINING
LESSON PLAN

CODE-FO-12

COURSE: FIRE OFFICER

LESSON: FIRE INSPECTION PRACTICES

EQUIPMENT NEEDED: NONE

TRAINING AIDS: EASEL, BLACKBOARD AND CHALK, REPORT FORMS, TRANSPARENCIES

INSTRUCTORS NOTES	TEACHING POINTS

I. Introduction

Inspection Practices are usually considered to be the most important non-fire fighting activity performed by firefighters.

A well planned and continuing inspection program conducted by personnel who are knowledgeable and well trained in their duties can prevent many serious fires.

The Fire Inspection Program provides the property owner with a valuable consulting service and is a means by which firefighters can more effectively carry out their responsibility of protecting lives and property.

1. Definitions

A definition of some of the terms relating to fire inspection will help clarify their meaning and possibly help a fire inspector know what is expected of him when he makes inspections.

INSPECT - to view or examine for the purpose of determining the quality or condition.

"INSPECTION" - means a close and critical examination by a competent authority.

COMPETENT AUTHORITY - a fire inspector who examines buildings, equipment, and processes to procure proper conditions with reference to fire and life safety.

INSTRUCTORS NOTES

TEACHING POINTS

FIRE PREVENTION INSPECTOR - an individual, directly associated with a fire department, whose assigned duty is to inspect, or cause to be inspected, all buildings used by the public and to enforce, or cause to be enforced, all laws and ordinances of a community in accordance with existing laws.

Such an individual may have a title, such as Fire Chief, Fire Marshal, or Fire Inspector, and he is the individual through which matters pertaining to fire safety must be channeled. This inspector may be the Fire Chief or his appointed representative.

FIRE COMPANY INSPECTOR - a member of a fire company, Firefighter, Lieutenant, or Captain, who makes inspections and submits written reports to the Fire Chief or Fire Marshal.

Note: Emphasize the following points.

a. Making fire department inspections is not a job for untrained personnel.

b. The importance of involving children in fire prevention programs such as "The Home Inspection Program", to teach them fire safety cannot be minimized. However, this type of activity should not be relied upon as a complete fire inspection.

c. The wearing of uniform caps and badges do not by themselves make a man a fire inspector, they are merely visible signs that identify a member of the fire department. To the public, however, the cap and badges indicate that the man who wears them is qualified to discuss fire protection matters and that he can give reliable advice as to how fire hazards can be corrected.

d. Fire prevention inspections are a special part of the total job of firefighter and no person should be permitted to make a fire inspection without special training in this field.

e. Only after men are trained to recognize fire hazards and to know how to correct situations that have been found are they qualified as competent authorities.

INSTRUCTORS NOTES

TEACHING POINTS

f. A fire inspector should also be able to explain to property owners why conditions are dangerous and to describe in simple terms the steps to be taken to remedy the
q situation.

g. WHEN A PERSON WITHOUT PROPER TRAINING OR EXPERIENCE ATTEMPTS TO MAKE A FIRE INSPECTION, IT TENDS TO DEGRADE THE FIRE PROTECTION PROFESSION.

The term "FIRE INSPECTOR" in this lesson will refer to either a fire prevention or fire company inspector.

2. Purpose and Scope

The purpose of this lesson is to present the subject of "Fire Inspection Practices" for any person who is associated with a fire department.

It will cover, in general, the following items:

a. Principal objectives of fire department inspections.

b. General information and fundemental fire and safety rules.

c. Inspection techniques and procedures.

d. Building and area surveys.

e. Home and special inspections.

3. Principal Objectives of Fire Department Inspection

These objectives cover, in general, all the inspection operations of a fire department and they may or may not apply to inspections made by fire companies or fire prevention inspectors.

a. To obtain proper life safety conditions.

b. To keep fires from starting.

c. To keep fires from spreading

INSTRUCTORS NOTES

TEACHING POINTS

d. To check adequacy and maintenance of fire protection equipment.

e. To assemble facts concerning the building and contents.

f. To aid the owner or occupant to understand and improve existing conditions.

Several types of organizations are responsible for making fire inspections. Three of them are:

a. Fire Departments
b. Insurance Organizations
c. State Agencies

The primary purpose of inspection by these organizations is to prevent fires from starting, with a secondary purpose of providing a reasonable means of extinguishing a fire. Beyond this, the similiarity stops, and interests, objectives, and details of inspection vary.

To clarify these responsibilities each type of inspection is separately discussed.

INSPECTIONS BY FIRE DEPARTMENTS

As fire department personnel -

are responsible for life and property

are deeply concerned with the problem of life safety under fire conditions

and desire a greater knowledge of the means of controlling fire

an inspection by department personnel should be a more thorough and complete inspection than one which is made by any other group.

INSPECTIONS BY INSURANCE ORGANIZATIONS

The term "Insurance Organizations" includes:

Inspection Bureaus
Insurance Associations
Insurance Companies

Inspections made by fire insurance organizations generally emphasize those items related

INSTRUCTORS NOTES

TEACHING POINTS

to the property. Detailed attention is usually given to:

rating the property to determine the premium cost

and

recommendations to eliminate or control fire hazards.

Most insurance companies will review proposed building plans for such features as:

the layout of automatic sprinklers

underground water mains

water supplies

construction features

flammable liquid storage

processing

heating and other possible hazards.

The American Insurance Association
Associated Factory Mutual Fire Insurance Companies
Factory Insurance Association
American Mutual Insurance Alliance

all maintain a staff of trained engineers for the purpose of studying conditions related to fire prevention and protection.

Some of the engineering and inspection services offered are:

Inspection of insured properties at frequent intervals.

Special inspections when necessary.

Consultation with architects, builders and manufacturers.

The developement of standards for fire protection.

INSTRUCTORS NOTES | TEACHING POINTS

Insurance inspectors in general are usually active on many committees of the National Fire Protection Association. Here, through cooperative work, many standards and technical publications are published.

Research studies are constantly being made of fire hazards in industry.

Proper and effective safety measures to control:

hazardous chemicals
explosive materials
special hazards

are also promoted by the insurance engineer and inspector.

INSPECTIONS BY STATE AGENCIES

State Agencies, such as the:

State Fire Marshal's Office

State Industrial Commission

State Education Department

are concerned primarily with life safety.

If a hazard exists that may involve property of others, state agencies would also act upon these cases and give attention to the compliance with state laws.

The regulating fire laws usually cover the following items:

The prevention of fire.

The storage, sale and use of explosives.

The installation and maintenance, of automatic fire alarm and extinguishing systems.

The construction, maintenance, and regulation of fire escapes.

The means and adequacy of exits.

INSTRUCTORS NOTES

TEACHING POINTS

The suppression of arson.

The investigation of the cause and origin of fires.

Many state agencies are active in the promotion of fire prevention education in schools and cooperate with other national, state, and local fire prevention bureaus or committees who participate in state fire service training programs.

II. PRINCIPAL OBJECTIVES OF FIRE PREVENTION INSPECTIONS

A. Engineering

B. Education

C. Enforcement

1. Engineering

Without a good foundation of engineering even the best educational and enforcement program will not prevent fires.

Engineering principles related to fire prevention and fire protection include such subjects as:

a. Building design and construction

b. Building equipment and facilities

c. Installed fire protection systems and devices

d. Water supply and distribution

While the design and development of building plans, extinguishing systems and water supply networks are all highly specialized engineering functions which are beyond the scope of the average fire inspector, he may contribute valuable information as a consultant to the engineer if he has made a thorough study of the fire prevention factors involved.

INSTRUCTORS NOTES

TEACHING POINTS

By reviewing:

Proposed project plans

Drawings of all new construction

Modifications, repairs and alterations

The fire prevention authority can assure the adequacy of protection measures during the preliminary and design stages.

NFPA 1969 Fire Report

Losses involving electronic computer equipment only

$ 10,000,000.00

474 fires in other than residential properties which caused $250,000.00 or more damage each.

54 persons were killed
875 were injured.

The total loss amounted to:

$389,000,000.00

While each of these properties were inspected by someone in the 12 months preceding the fires, 60% were classed as resulting from "undetermined cause."

2. Education

The fire prevention bureau or department, in cooperation with other agencies, is responsible for developing and conducting a continuing public education program aimed at maintaining a high level of fire safety consciousness and promoting public relations.

These programs generally include, but are certainly not limited to:

a. Promotion of fire prevention and public relations through personal appearances and in cooperation with civic authorities and organizations.

b. Participating in and coordinating with other fire prevention and safety oriented agencies and programs.

c. The development of special fire prevention programs centered around specific holiday and periods of the year.

d. The continuing development and promulgation of fire protection literature.

e. The use of all available news media to reach the public.

INSTRUCTORS NOTES

TEACHING POINTS

3. Enforcement

Competent fire prevention inspectors are able, through their recommendations, to affect a great number of on the spot corrections of fire hazards.

DON'T Use the threat of enforcement as the only criteria for eliminating fire hazards.

DO Properly present yourself and your recommendations without resorting to the threat of enforcement.

ONLY IN EXTREME CASES, such as the following types of hazardous circumstances, and ONLY when powers of positive influence have failed is it necessary to resort to legal tactics to correct hazards.

a. A major or dangerous hazard of immediate consequence exists which is not corrected in a reasonable time.

b. An effective fire prevention program has not been established.

c. The individual who is responsible refused to comply with sound fire prevention concepts.

d. A trend of recurring hazards is formed.

It is not intended to infer that a fire inspector should not make a record of hazards which are corrected on the spot.

ALL FIRE HAZARDS should be recorded.

The record of previous inspections should be closely studied by the inspector or taken with him to provide a guide for his current inspection.

There will be times when the hazard discuvered cannot be immediately corrected.

INSTRUCTORS NOTES | TEACHING POINTS

The inspector should:

(1) Be realistic in determining a deadline for the correction of the hazard.

(2) If on the follow-up inspection the hazard has not been fully corrected but sincere efforts are being made to do so, the inspector should provide another re-inspection date.

(3) Make his follow-up inspections on the date and at the time specified.

(4) Be generous in praising good programs and the efforts of those who have corrected fire hazards.

It is this positive reinforcement that motivates occupants to continue to maintain a hazard free facility.

III. FIRE HAZARDS

A "Fire Hazard" may be defined as:

any material

condition

or act

That will:

Contribute to the start of a fire

or, increase the extent and severity

of a fire.

In order to prevent a situation from being hazardous, an inspector must eliminate one of the three components of the fire triangle:

a. the oxygen supply hazard

b. the fuel supply hazard

c. the heat source hazard

INSTRUCTORS NOTES

Refer to Section One IFSTA manual 107 "Fire Ventilation Practices" for a more complete discussion of the laws of combustion and heat, and the burning process.

TEACHING POINTS

If any one of these hazards can be eliminated, a fire cannot occur.

The oxygen supply hazard is normally present and very little control can be maintained over the oxygen supply except in special cases.

Certain reactive materials will burn in an atmosphere of nitrogen or produce their own oxygen.

Fuel supply and heat source hazards are more readily controlled.

Examples: A pile of shavings or an open pan of gasoline are hazardous from a fuel supply standpoint because fuel in an easily ignited form is present.

A burning cigarette or a flame from a welding torch are heat source hazards because their heat is sufficient to ignite many combustible materials.

If heat sources are kept separated from fuel supplies, the condition will be safe indefinitely.

Principal fuel materials, "fuel supply harards", are easily ignited and they have some characteristics which make them dangerous from the standpoint of fire safety.

The following list of fuel supply and heat source hazards were taken from the N.F.P.A. Fire Protection Handbook, 13th Edition.

FUEL SUPPLY HAZARDS

ORDINARY COMBUSTIBLE SOLIDS

Wood - cloth - paper

FLAMMABLE AND COMBUSTIBLE LIQUIDS

Gasoline - oils - alcohol

COMBUSTIBLE GASES

L.P.G. - natural - manufactured

INSTRUCTORS NOTES	TEACHING POINTS
	CHEMICALS
	Nitrates - oxides - chlorates
	DUSTS
	Grain - wood - coal
	METALS
	Magnesium - sodium - potassium
	PLASTICS
	Resins - casein - cellulose
	HEAT SOURCE HAZARDS
	CHEMICAL HEAT ENERGY
	Heat of combustion
	Spontaneous heating
	Heat of decomposition
	Heat of solution
	ELECTRICAL HEAT ENERGY
	Resistance heating
	Induction heating
	Dielectric heating
	Heat from arcing
	Static electricity heating
	Heat generated by lightning
	MECHANICAL HEAT ENERGY
	Frictional heat
	Heat of compression
	NUCLEAR HEAT ENERGY
	The classification of fire hazards into catagories is influenced by the occupancy

INSTRUCTORS NOTES | TEACHING POINTS

class and is directly associated with the processing activities that are conducted.

IV. COMMON HAZARDS

A common fire hazard is a condition which is likely to be found in almost all occupancies and is not generally associated with any specific occupancy, process or activity.

Some examples of common hazards are:

Heating and cooking equipment

Smoking and matches

Housekeeping (enviromental control)

Electrical Power and equipment

Air conditioning and ventilating systems

Cleaning agents, compounds and equipment

Storage incompatability

V. PERSONAL HAZARDS

Personal hazards are probably the most serious of all common hazards and they usually offer the greatest problem to the fire inspector.

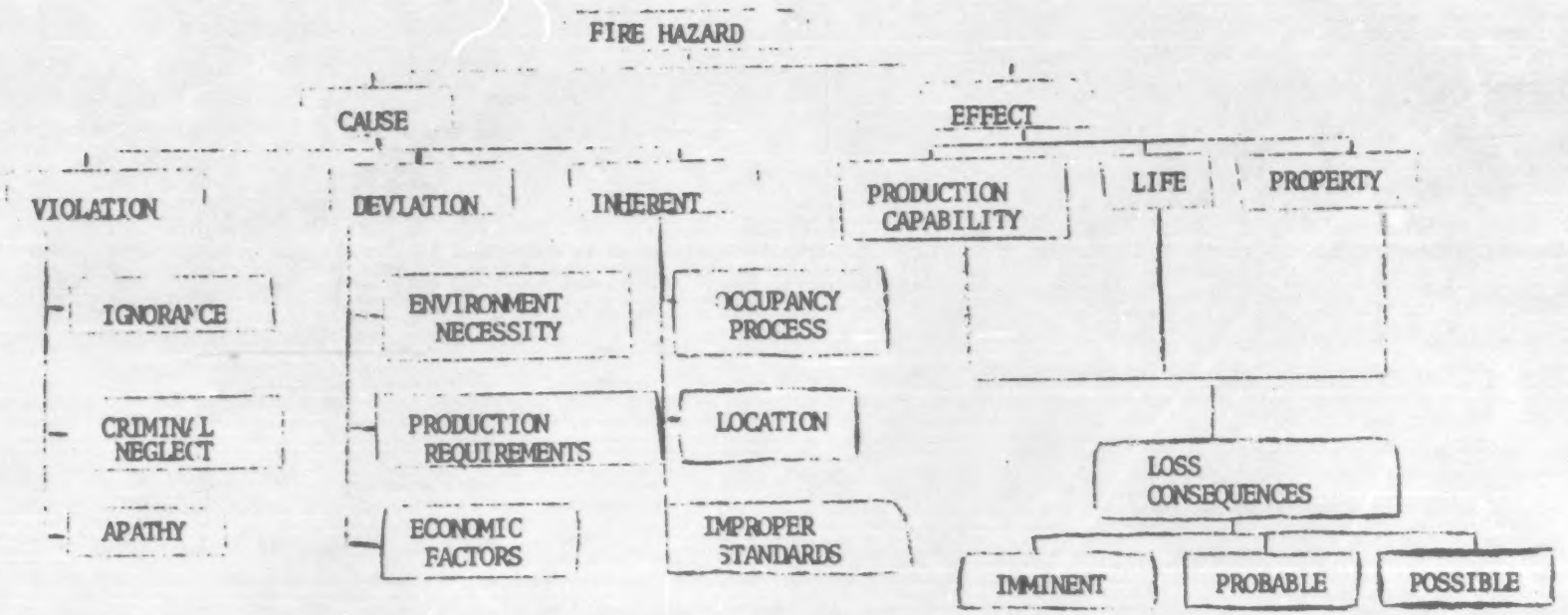
The term "personal hazard" covers all the INDIVIDUAL TRAITS, HABITS, PERSONALITIES, of the people who, SUPERVISE, WORK IN, or VISIT, the property or building in question.

The personal hazard is always present and must be given consideration by the fire prevention inspector.

Refer to:

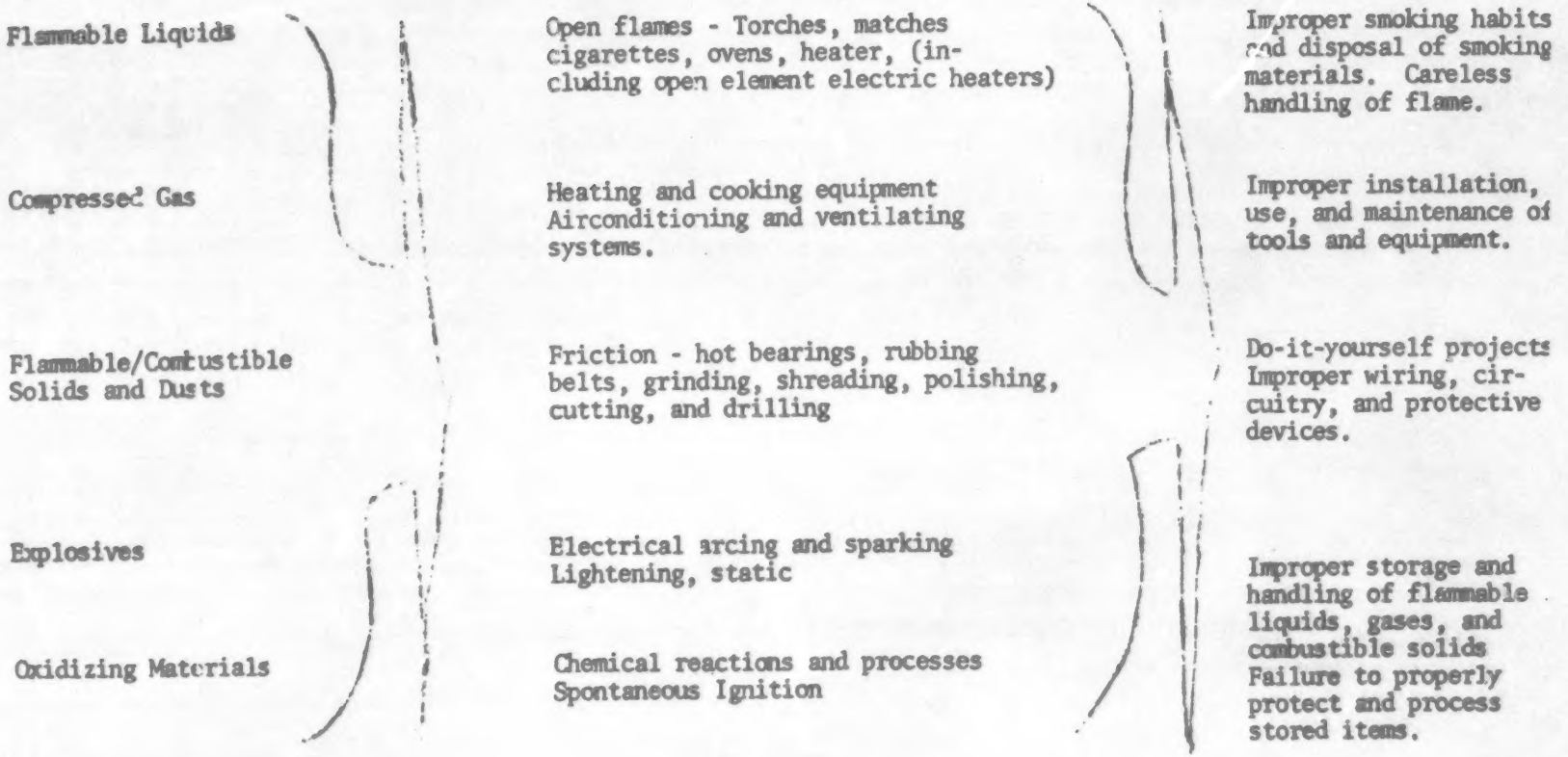
Fire Hazard Analysis Chart
Fire Cause Analysis Chart

FIRE HAZARD ANALYSIS



ALL FIRE HAZARDS ARE A CAUSE-EFFECT PHENOMENON AS DEPICTED IN FIGURE _____.

FIRE CAUSE ANALYSIS
(Discover the relationships)


Flammable Liquids
Compressed Gas
Flammable/Combustible Solids and Dusts
Explosives
Oxidizing Materials
Open flames - Torches, matches cigarettes, ovens, heater, (including open element electric heaters)
Heating and cooking equipment Airconditioning and ventilating systems.
Friction - hot bearings, rubbing belts, grinding, shreading, polishing, cutting, and drilling
Electrical arcing and sparking Lightening, static
Chemical reactions and processes Spontaneous Ignition
Improper smoking habits and disposal of smoking materials. Careless handling of flame.
Improper installation, use, and maintenance of tools and equipment.
Do-it-yourself projects Improper wiring, circuitry, and protective devices.
Improper storage and handling of flammable liquids, gases, and combustible solids Failure to properly protect and process stored items.

INSTRUCTORS NOTES

TEACHING POINTS

VI. SPECIAL HAZARDS

A special hazard may be defined as a fire hazard arising from the processes or operation that are peculiar to the individual occupancy.

Some materials and processes that constitute special hazard occupancies are:

Painting
Welding
Dispensing and storage of Flammable Liquids
Storage and handling of explosives
Chemicals
Acids
Gas
Dust

Processes such as use of flammable liquids in dip tanks, ovens, driers, mixing coating, spraying and de-greasing.

The processing of materials such as metal, rubber, cork, fertilizer, grains and drugs which produce flammable dusts which present problems in preventing explosions and spontaneous combustion of the finely divided materials.

VII. TARGET HAZARDS

A condition, facility or process which could produce or stimulate a fire that would involve:

A POSSIBLE LARGE LIFE LOSS
A POSSIBLE LARGE FIRE LOSS
A LARGE CONCENTRATION OF MATERIAL THAT WOULD BURN RAPIDLY
A CONCENTRATION OF MATERIALS OF A HIGH MONETARY VALUE

Some examples are:

Lumber Yards
Public Assembly Buildings
Flammable Liquid Storage and Dispensing Areas
Fur Storage Vaults
Area Shopping Centers
Rows of Frame Tenements
Hospitals
Schools

INSTRUCTORS NOTES

TEACHING POINTS

VIII. EXPOSURE HAZARDS

Property that may endanger other property or structures by fire which may extend from the exposure hazard.

When inspecting a building all nearby buildings trash burning devices or other similiar items must be evaluated to determine the degree to which they may be exposure hazards.

Where is the building located?

Is it in a highly built-up area where the exposure hazard would naturally be greater

or

In an open area where the buildings are widely spaced.

Does it have wood trim, combustible roof covering, or other combustible materials that may be easily ignited by an exposure fire?

The primary consideration in exposure fires is radiant heat.

Factors which will effect minimum distance and protection criteria are:

(1) Construction

Number of stories
Combustibility of material involved

(2) Occupancy

SEVERE, MODERATE OR LIGHT HAZARD

Based on the concentration of combustible storage, the process involved, and the number of occupants.

(3) Area

Square feet of space per floor.

INSTRUCTORS NOTES

TEACHING POINTS

IX. CONFLAGRATION HAZARDS

A condition in which a considerable number of buildings are so located that their involvement in fire would constitute a conflagration.

Examples:

Fires starting in hazardous occupancies in congested sections which spread in one or more directions before effective resistance is organized to bring them under control.

Fires occurring in primarily residential sections which spread beyond control due to closely built combustible construction and wooden shingle roofs.

Conflagrations resulting from extensive forest and brush fires entering a municipality over a wide front.

Conflagrations due to explosions which spread fire over a wide area.

Conflagrations are caused by a combination of factors. Some of the principal factors which have contributed to the creation and development of conflagrations include:

Wood shingle roofs	Lack of exposure protection
High winds	
Inadequate water distribution	Inadequate public fire protection

X. FIRE HAZARD ANALYSIS

Fire hazards are cause-effect phenomenon. There are three basic causes of all fire hazards which are violations or deviations of sound fire prevention practices or inherent problems and there are three basic effects with varying degrees of consequence.

See fire Hazard Analysis Chart for Clarification

The probable effect of the hazard, measured in incident/loss consequences, establishes the priority of the corrective action.

INSTRUCTORS NOTES

TEACHING POINTS

It is the purpose of the fire prevention inspection TO:

A. Locate the fire hazard

B. Determine its cause

C. Predict the probable effect

D. Affect its elimination

XI. FIRE CAUSES

A "Fire Cause" involves three controlable conditions.

These are:

(1) The fuel supply
(2) The heat source
(3) The hazardous act

A fire is caused when the fuel supply and the heat source are brought together by some hazardous act.

Fires are frequently reported erroneously because the investigator fails to consider all these factors.

Some fuel supplies, heat sources, and hazardous acts that frequently interact to cause a fire are shown on the Fire Cause Analysis Chart.

XII. HAZARDS OF MATERIALS

The N. F. P. A. Committee on Fire Hazards of Materials has done considerable work on a guide to label and classify flammable liquids and other hazardous materials.

The guide provides a simple system of easily understood markings identifying the hazards of a material in terms of:

"Health"
"Flammability"
"Reactivity (stability)"

INSTRUCTORS NOTES	TEACHING POINTS

The order of severity is indicated numerically from:

Four (4) indicating a severe hazard

to:

Zero (0) indicating no special hazard

These markings are color coded:

BLUE for "health" hazard
RED for "Flammability"
YELLOW for "reactivity (stability)"

The fourth space in the diagram may be used to indicate additional information such as:

Proper extinguishing agent
Unusual reactivity with water
Pressurized containers
Radioactivity
Protective equipment required in case of fire or other emergency.

For further information on the ranking of materials consult:

National Fire Protection Association
Standard No. 704-M
"Identification of the Fire Hazards of Materials."

XIII. TRANSPORTATION HAZARDS

A transportation hazard may be defined as a condition that is created by transporting potentially dangerous material by common carrier.

Transportation hazards may be divided into two catagories:

hazards created by the material that is being transported

and

hazards created by the transportation medium.

INSTRUCTORS NOTES	TEACHING POINTS
	The Department of Transportation has placed regulations upon these materials considered to be extremely hazardous. The regulations cover practical means for securing safety in transit of hazardous materials such as: Acids — Toxic Gases Poisons — Corrosive Liquids Fireworks — Flammable Gas Explosives — Flammable Liquids Caustic Liquids — Radioactive Materials Solids — Dangerous Flammable Compressed Gases HAZARDOUS MATERIALS MARKINGS Safe Handling, storage, transportation and use of hazardous materials are regulated and controlled by various divisions of Government, fire protection agencies and industrial organizations. Department of Transportation American Trucking Association The Atomic Energy Commission National Fire Protection Association. The markings of each agency are shown in the IFSTA Manual Fire Inspection Practices for the information they may provide in fire fighting operations.
Sample placards of these markings and a compilation of D.O.T. Regulations and standard operating procedures of Common and Contract Carriers of Property entitled "Dangerous Article Handling" is available from Dept. of Safety American Trucking Assn., Inc. 1616 P Street N.W. Washington, D.C. 20036	XIV. BUILDING CONSTRUCTION 1. FIRE RESISTIVE (TYPE A) CONSTRUCTION 2. FIRE RESISTIVE (TYPE B) CONSTRUCTION 3. PROTECTED NONCOMBUSTIBLE CONSTRUCTION 4. UNPROTECTED NONCOMBUSTIVLE CONSTRUCTION 5. HEAVY TIMBER CONSTRUCTION 6. ORDINARY CONSTRUCTION 7. WOOD FRAME CONSTRUCTION

INSTRUCTORS NOTES

TEACHING POINTS

CLASSIFICATION OF OCCUPANCIES

1. ASSEMBLY OCCUPANCY
2. BUSINESS OCCUPANCY
3. EDUCATIONAL OCCUPANCY
4. HIGH HAZARD OCCUPANCY
5. INDUSTRIAL OCCUPANCY
6. INSTITUTIONAL OCCUPANCY
7. MERCANTILE OCCUPANCY
8. RESIDENTIAL OCCUPANCY
9. STORAGE OCCUPANCY
10. MIXED OCCUPANCY
    - A. LIGHT HAZARD
    - B. ORDINARY HAZARD
    - C. EXTRA HAZARD

STRUCTURAL FEATURES WHICH INFLUENCE FIRE SPREAD AND SAFETY

Fire Walls, Fire Partitions, Fire Doors, Fire Windows and Shutters, Curtain Boards, Venting, Fire Exits, Fire Escapes, Fire and Smoke Dampers, Fire Stopping

XV. INSPECTION TECHNIQUES

A firefighter trained in the skills of his profession and possessed with essential information has the potential for doing effective inspection work.

1. Review of Previous Inspection Maps and Reports

   If previous inspections have been conducted an inspection form or report was completed which shows what discrepancies were found and what corrective action was required.

INSTRUCTORS NOTES	TEACHING POINTS

By reviewing this inspection report the inspector can familiarize himself with hazards which are likely to be encountered.

If departmental policy prohibits taking previous inspection reports for use as a guide, the inspector should copy all pertinent information:

Persons to be contacted
Locations of keys for areas that are normally kept locked
Special hazards, etc.

The study of maps or sketches made during previous inspections will enable the inspector to note any structural changes or alterations and make the necessary changes to the maps or sketches.

2. <u>The Inspectors Equipment</u>

The equipment needed by the inspector may vary from one facility to another.

Equipment needed at the place of inspection may be carried by the inspector or located on the fire apparatus at the scene.

Cover-alls or work uniforms for crawling into attics, concealed spaces, valve pits and like places. (Cover-alls should not be worn on initial contact)

Clipboard, inspection forms, and standard plan symbols.

Materials for preparing sketches.

Graph paper	50-foot tape
6-inch rule	Colored pencils
6-foot tape	Eraser

A flash or hand light.

A polaroid type camera, equipped with flash attachment, provides a means by which conditions may be recorded.

A pitot tube and gauges should be available when water flow tests are required.

INSTRUCTORS NOTES

TEACHING POINTS

Reference books, such as the N.F.P.A. Inspection Manual, Building Codes, local ordinances, etc., are often needed to clarify important points.

A list of special hazards commonly found in the type of occupancy to be inspected.

A copy of previous inspection reports and maps of the property being inspected.

3. Approach

The occupant should be pre-informed of the purpose of the fire inspection and asked whether there are certain days when such inspections would be impracticable.

Inspections are normally made during usual business hours, but night inspections are sometimes necessary.

Example: Occupancies such as theaters, night clubs, and halls may require a part of the inspection to be done in the daytime and completed at night when the building is occupied.

Unless there is reason to suspect that the occupant is not cooperating and that certain hazardous acts or processes are discontinued only during the inspection, it is normally a good practice to establish an appointment date and time for the actual inspection.

DO schedule your inspections.

DON'T fail to be there at that time and date. If you cannot be ther, contact the occupant and advise him of the date you will be there.

DO contact the person who is in charge of and responsible for the building or property.

DO ask management to have a representative accompany you on inspection. (in facilities having a fire prevention inspector, fire brigade chief or a safety and security officer,, this individual should be asked to join the inspector.

INSTRUCTORS NOTES

TEACHING POINTS

DON'T attempt an inspection without permission.

DO wear clean and neat work clothes or uniform.

DO observe and record in your preliminary report before entering the property or building:

Location of fire hydrants
Location of fire alarm boxes
Location of exposures
The condition of streets
General housekeeping in the area
Type of buildings, occupancy and general appearance of the neighborhood to assist in the determination of any conflagartion hazards that may exist.

The inspector must realize:

That the owner of the building is as interested in preventing fires as the inspector is. He may require advice and assistance concerning what constitutes a fire hazard and what actions he can take to eliminate hazardous conditions from his property.

That 99% of the success of the fire prevention program depends on voluntary actions on the part of the building occupants.

That he is serving as an ambassador of the fire department. He is to advise and assist - NOT TO DICTATE.

Fire prevention rules, laws and ordinances are not arbitrary. They are based on sound logic and are for the good of the occupant.

The inspector, then, must understand the reasons for the criteria that he recommends and must be prepared to discuss its purposes in depth.

4. Conducting the Inspection

In order to make a thorough inspection the inspector should:

INSTRUCTORS NOTES

TEACHING POINTS

Take time to make notes and sketches of all important features.

Discuss fire protection problems with the owner.

A complete set of notes and a well-prepared sketch of the building provides dependable information.

Start the inspection from either the roof or the basement and systematically inspect each intervening floor.

After permission to inspect the premises has been received, the inspector should return to the outside of the building and conduct an inspection of the exterior. This will aid in drawing the exterior walls on the floor plan.

Then the inspection team should go directly to the roof or basement and inspect each floor in succession, being sure that no areas of the building are omitted.

When encountering locked doors to areas request that they be opened explaining your reasons. If this is refused because of secret work being performed request that the process or equipment being performed be screened or covered so that the inspection can be made. REPORT ALL AREAS WHERE ENTRANCE IS REFUSED TO THE CHIEF OF THE DEPARTMENT FOR HIS ACTION.

Where there are several buildings located on the property inspect and record each one separately.

Make your initial overall sketches from the tallest building so that a general view of the property can be gained.

Complete the sketch of each floor before proceeding to the next. BE SURE THAT ANY CHANGES IN STRUCTURE ARE RECORDED ON THE SKETCH AND IN THE INSPECTION REPORT.

INSTRUCTORS NOTES

TEACHING POINTS

5. Briefing the Responsible Occupant

Throughout the inspection tour the fire inspector should place special emphasis on fire prevention matters of local concern which are peculiar to the particular facility being inspected.

Briefing the occupant on:

The objectives and importance of fire prevention.
Fire reporting procedures
Periodic fire drills, if applicable.
Evacuation procedures.
Basic firefighting techniques
The recognition and elimination of fire hazards.

6. Attitude

The inspector determines the attitude throughout the inspection. If he is critical and negative in his approach, the degree of cooperation and compliance that he can expect is minimal.

He must always keep in mind the fact that his greatest weapon is the goodwill of the occupant.

If the occupant becomes convinced:

That fire prevention laws and ordinances are not arbitrary;

That he and the fire prevention inspector are working toward the same goals;

That the fire inspector is the person who is in a position to assist him in saving his property from fire;

he will wholeheartedly participate in the elimination of fire hazards.

INSTRUCTORS NOTES	TEACHING POINTS
	7. Eliminating Fire Hazards From the point of view of the fire service there is no such thing as a minor or major fire hazard since all hazardous conditions and acts must be eliminated if the fire toll is to be reduced.
Refer to Fire Hazard Analysis Chart	Experienced fire inspectors, however, realize that the immediate concequences of some conditions and acts are more or less pressing and severe than others. MINOR FIRE HAZARDS Fire hazards which might be considered less serious in nature are those which involve possible loss concequences of small risk property or production only. These may be considered minor hazards in that no life is at risk and the degree of risk is small. MAJOR FIRE HAZARDS Fire hazards which involve major violations or deviations, the possible, probable, or imminent consequence of which includes serious property, production or life risk. Every fire inspector will be able to identify certain hazards that would definitely fall into each category but there will be other hazards of varying degrees of loss consequence probability that would be interpeted by one inspector to be minor in nature while another would consider it to be major.
	8. On-The-Spot Corrections The vast majority of fire hazards can be corrected on-the-spot while the fire inspector is present. The fire inspector should: Encourage operative personnel to make the corrections while he is in the area. Enter on-the-spot corrections in his inspection report.

INSTRUCTORS NOTES

TEACHING POINTS

Report corrections made during inspection to management during closing interview.

ALL HAZARDS must be recorded at the time of their discovery and reported on the inspection report.

9. Closing Interview

A report to the person with authority, after an inspection, can do much to secure the cooperation of the owner towards matters that need attention.

DO comment favorably on the good conditions that were found and the excellent cooperation of the occupants in correcting minor hazards on-the-spot.

DO discuss in general, unfavorable conditions or hazards that have to be corrected.

DON'T enter into argumentive discussions.

DO explain that such conditions will be studied more fully and that recommended solutions will be submitted in a written report.

A final interview also gives the inspector an opportunity to express his thanks for the courtesies extended to the fire department and opens the way to explain how firefighters will study these reports from the standpoint of firefighting procedures.

10. Final Resort Actions

The main point for the fire inspector to remember is that he is not an enforcement official. If the owner/occupant refuses to cooperate, the inspector is obligated to report the violation along with all documentary evidence to the proper enforcement agency.

The occupant has recourse to a variety of appeal procedures depending on the type facility involved and its location.

INSTRUCTORS NOTES

TEACHING POINTS

Inspectors should always be aware of the fact that their recommendations may lead to the involvement of enforcement agencies.

Reference: "Firemen's Law Book" by Bahme, Chapter 14, Procedural Points.

THEY MUST THEREFORE THOROUGHLY DOCUMENT ALL THEIR RECORDS, REPORTS AND VISITS, OMITTING NO DETAIL THAT MIGHT HAVE A BEARING ON THE CASE.

11. Special Inspections

Home Inspections by Fire Companies

Home fire inspection programs are well worth the effort expended. Small volunteer fire departments can secure satisfactory results as well as large full-time fire departments.

Reference: "Training Firemen To Make Dwelling Inspection" N.F.P.A. Publication

WHO The home inspection will be accomplished by firefighters who have been trained to find fire hazards in homes.

WHAT A program designed to make your community a safer place in which to live. It is voluntary on the part of the occupant.

WHEN When will the program begin? During what hours of the day will the inspection be conducted?

WHERE What areas of your community are you going to inspect first? Larger communities have found it practical to divide the community into areas and send out letters of advance notification as to what day and approximately what hour the firefighters will arrive.

WHY To obtain proper life safety conditions.
To keep fires from starting.
To help the owner or occupant understand and improve existing conditions.

INSTRUCTORS NOTES

TEACHING POINTS

When fire companies are assigned to inspection duty, the following should be observed:

No entry should be made into any dwelling without definite expressed permission from an adult occupant.

An adult occupant should be present when any inspection is made of a private residence.

The owner or occupant should be carefully advised that comments on corrections are strictly suggestions and there are no enforcement follow-ups.

There should not be any public comment by the inspectors relative to an observation in any home.

There should not be any release of information to either the news channels or insurance carriers.

The office file on home inspections should be strictly confidential and should not be open to the public for any purpose .

Inspections should always be made by a team. One man could become involved in an embarrassing situation involving legal technicalities.

The firefighter should be neatly dressed in uniform or street clothes, explain his purpose, and conduct the inspection in a professional manner.

The scheduled inspection should include:

Basement, utility rooms, storage rooms, garages and kitchens. Other rooms or areas of the house MAY be inspected at the request of the occupant, but NEVER at the inspector's suggestion.

<u>What to look for</u>

Condition of roof
Condition of chimneys
Condition of yard
Waste burners

INSTRUCTORS NOTES	TEACHING POINTS
	Condition of garages and sheds Use and storage of flammable liquids Accumulations of waste and discarded material Disorderly arrangement of fuel Ashes in contact with wood Furnaces, stoves, smoke pipes and gas appliances, vents and clearance, piping Oil burning installations, piping and storage Chimney defects and clearances Firestopping Electrical wiring Remember be courteous at all times and when hazards are found do not order corrections but do explain the hazard, its potential danger and the proper method of correction. It is the firefighters responsibility to represent his fire department and meet the citizens with dignity and pride.
Refer to: Wisconsin Statues Chapter 118.07 (2) (a) (b)	<u>Fire Exit Drills for Schools</u> Fire exit drills are a matter of great importance when inspecting schools. Some states have laws which establish where the responsibility lies for holding school fire drills, their frequency, and other details. Every fire department inspector should be aware of the extent of coverage and specific requirements of such regulations.
Refer to: Wisconsin Administrative Code Chapter H32 Nursing Home Rules, Department of Health and Social Services Division of Health.	<u>Inspections of Nursing, Convalescent and Rest Homes</u> Before a fire prevention inspector attempts to inspect and recommend corrections concerning institutions of this type, he should first acquaint himself with state and local fire and safety laws, requirements of the state health department, and local ordinances.
	<u>Inspection of Decorations</u> There are many types of events held each year, the decorations for which may create a fire hazard. They should be checked by the fire department.

INSTRUCTORS NOTES

TEACHING POINTS

All decorations should be checked by a flame test to determine their flammability.

The cost of flameproof crepe paper is the same as ordinary crepe paper and properly informed individuals will buy it.

In addition to inspecting the decorations which may be used, the following additional hazards should be eliminated.

Blocked exits	Flammable Materials
Unsafe temporary wiring	Exit lites and signs
Smoking hazards	hidden
Inadequate alarm and	Poor Housekeeping
extinguishing equipment	Heat hazards

Inspection of decorations should be done early enough to provide the individual sufficient time to correct any existing hazard. Special inspections of this type can do much to improve the relations of the fire department with the community.

Inspection of Parade Floats

Most communities have one or more parades each year. The larger and more colorful parade floats present a problem in that people are sometimes placed in the middle of lightweight flammable decorations.

The safety program for parades should be carefully planned and executed each year. It should be a cooperative project of the fire department and the association sponsoring the parade.

General Safety Requirements are:

The use of paper napkins, cotton batting, foam plastics and others should be PROHIBITED.

Smoking should be PROHIBITED on or near floats, including the assembly area and along the line of march.

Use of flameproof material or spraying with flameproofing liquid should be required.

INSTRUCTORS NOTES

TEACHING POINTS

An approved fire extinguisher should be carried on every float and at least one person on the float must be familiar with its use.

Exhaust pipes should extend beyond the decorations and be isolated from the decorations by lagging, or wrapped with asbestos tape.

Float drivers should have proper visibility. Driver cubicles must be properly ventilated and the vehicle on which the float is mounted must have good operating brakes.

Trucks or jeeps on which floats are built should have a tire and battery check before parade time and should be serviced for oil, water and gasoling. NO AUXILIARY GASOLINE SHOULD BE CARRIED.

A tow ring or cable should be readily accessible from outside the float so that the vehicle may be pulled out of the procession with the least possible delay in case of breakdown.

Emergency evacuation panels should be provided for every occupant.

The dangers of carbon monoxide gas accumulation in the enclosed portion of the float cubicles should be checked.

Every float that has been inspected should be tagged with a colored label.

Inspections of parade units require very little time and effort and the rewards of a fire safe parade are well worth the effort.

<u>References</u> - Suggested reading for Lesson 12

Fire Inspection Practices 3rd Edition IFSTA

Published by - The Department of Fire Protection
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